THE OLD TIMER'S BULLETIN

OFFICIAL JOURNAL, ANTIQUE WIRELESS ASSOCIATION, INC.

Published for the Old Time Wireless Operator, Historian and Collector

VOL. 29 AUGUST 1988 NO. 2

"An early collector .... circa 1920."

(See page 3)

Devoted to research and documentation of the history of wireless communications.

Member:
American Association of Museums
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HOLCOMB, NEW YORK 14469

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A.W.A. JOURNAL
"The Old Timers Bulletin"

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William Fizette, RD #1, Box 55, Henryville, Pennsylvania 18332
All Bulletin material except Ads and Reviews.

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SILENT KEYS

Paul Miller, W9REW
Ray Glang, W8CJK
James Brennan
Fred Barry, K6RTU
Ken Conrad, W2IIE
AWA Charter Member

COMING EVENTS
ANTIQUE WIRELESS ASSOCIATION

AUG. 6 N.F.W.A. - AWA Meet Elma, N.Y.
SEPT. 11 Gaithersburg Hamfest Gaithersburg, Md. A.W.A. Booth
SEPT. 21-25 NATIONAL CONFERENCE Canandaigua, N.Y.
OCT. 16 P.S.A.R.A. - AWA Meet Seattle, Wash.
OCT. 19-20 1929 QSO PARTY
OCT. 21-23 V.R.P.S.- AWA Dallas, Texas
NOV.-DEC. Florida Meet
NOV. 6 ANNUAL BUSINESS MEETING 2 PM, Sheraton Inn Canandaigua, New York
DEC. - Annual Christmas Party
Other Meetings to be announced.

COVER STORY ....

This picture was found by Nick Graver in a box obtained at a public auction. There was no identification or information on the back of the print.

Effective immediately all

DUES and ADDRESS CHANGES

must be sent to the following address:

ANTIQUE WIRELESS ASSN.
BOX "E"
BREESPORT, NY 14816

MEMBERSHIP APPLICATION WITH OTB MAILING

Once a year the Association includes a blank membership application with the Bulletin mailing. Please give to a friend who may be interested in AWA activities and the *Old Timers Bulletin*. He may also wish to attend the Annual Conference which requires AWA membership. Thank you.

Membership Committee

ASSOCIATION NEWS

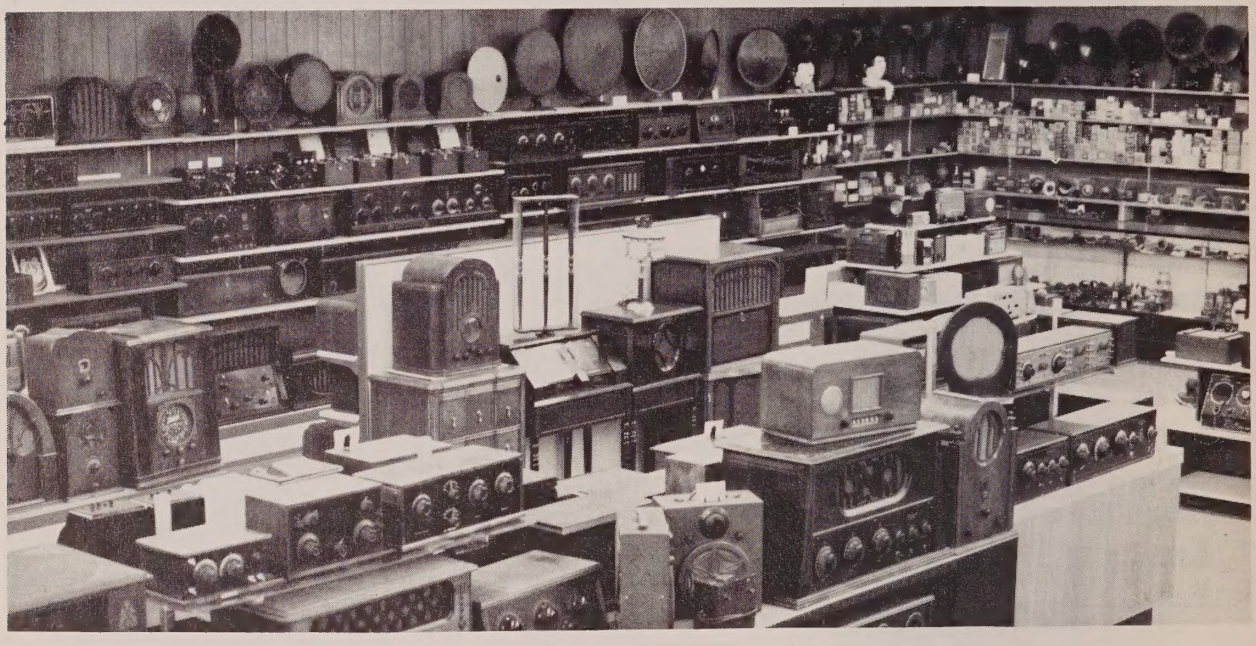
Report by Cicely Blossom-Smith

AWA MEETS HAVE ATTENDANCE INCREASE

Chairmen of recent AWA gatherings all report attendance increases over previous years. John Reichart had 150 at his New Jersey "*Meet*", with 80 at the noonday luncheon. The American Legion Ladies seated 100 at the local New York Spring dinner with another 100 flea-marketing outside. This event sponsored two popular auctions.

The IHRS-AWA Regional Meet at Ft. Wayne had attendance well over 200 and one of the best auctions to date. Members from North Carolina, Tennessee, New York, Missouri, Iowa and Minnesota as well bordering states made it the best ever.

The Northland Antique Radio Club chalked up another 2-day successful meet with their "*Radio Daze '88*" in Minneapolis. Good programming, flea market, outstanding equipment contest and a visit to Joe Pavek's new Museum made this event outstanding. Don't miss this one next year!



Joe Pavek's new museum (Minneapolis) was the scene for "Radio Daze '88".

ASSOCIATION NEWS

BULLETIN DEADLINES

Both our editor and printer require lengthy lead times. If you plan to submit material for publication, please adhere to the following times:

Issue	FEBRUARY	MAY	AUGUST	NOVEMBER
WANT ADS	December 15	March 15	June 15	September 15
MEETING NOTICES	December 1	March 1	June 1	September 1
ARTICLES	October 1	January 1	April 1	July 1

Who to send to:
WANT ADS: Dick Ransley, 17 Sheridan Street, Auburn, NY 13021
MEETING NOTICES: Lauren Peckham, Rte. 1, Breesport, NY 14816
ALL OTHER MATERIAL: Bill Fizette, RD #1, Henryville, Pennsylvania 18332

Review:

SOUTHEAST CONFERENCE

Members in North Carolina and neighboring states had an enjoyable weekend at the Annual AWA South-East Conference, ably handled by Ron Lawrence and Bob Lozier.

A Friday rain didn't deter the early birds from flea marketing or finding their way to Ron's house for a pleasant evening talking and looking at old gear. Programming was highlighted with a talk by Bob Lozier and a Philco "90" restoration project by Stan Watkins. An Equipment Contest saw several beautiful receivers on display (see photo). The 1989 event will be hosted by Lew Elias on April 14-15 in Winston-Salem. Plan to attend.

Ron Lawrence's AK-82 took 1st place.

DID YOU KNOW – the first wireless communication between Australia and Europe was accomplished in 1918 with a 200 kw spark transmitter on a wavelength of 14,000 meters.

BACK ISSUES

The following OLD TIMERS BULLETINS remain in stock. Make check out to A. W. A. and mail to:

Dexter Deeley
8 Briar Circle
Rochester, N. Y. 14618

Vol. #	Vol. #	Vol. #	Vol. #
14-4	22-3	25-3	28-1
17-1	22-4	25-4	28-2
18-3	23-1	26-1	28-3
19-4	23-2	26-2	28-4
20-2	23-3	26-3	29-1
20-3	23-4	26-4	
21-1	24-1	27-1	
21-2	24-3	27-2	
22-1	24-4	27-3	
22-2	25-1	27-4	

$2.50 each postpaid

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(Issues with Monograph)
$4.00 each postpaid

Vol. 1-2 and 1-3 (Reprints for reference) $.50 each ppd.

A.W.A. ACTIVITIES

THE AWA REVIEW VOLUME III, 1988 Issue

Our two volunteer editors, W2LV and K3ZJW, have announced that REVIEW III is well into the editing stage and should be available for sale at the September conference. There are seven papers:

- **Atwater-Kent Early Radio Development .... Part III, The Golden Years, by Ralph O. Williams**
- **Early Radio Broadcast Audio Quality, by Robert M. Morris**
- **Broadcast Network Transmission Facilities, by Ludwell A. Sibley**
- **AC Supply for Radio Receivers ... How the Lowel and Dunmore patents (almost) Changed the Industry, by Alan S. Douglas**
- **The Mignon Company and its Radio Receivers, by Lauren Peckham**
- **Military and Foreign Telegraph Keys, by Louise R. Moreau and Murray D. Willer**
- **Alexanderson Alternator Design and Operation, by Glenn C. Fuller**

Volumes I and II are now sold out. Preliminary information is that Volume III will be available for $8, plus a shipping and handling fee of $1.50. More information will be forthcoming in a future issue of the *OTB*.

WASHINGTON

Puget Sound Antique Radio Association and AWA

SUNDAY, OCTOBER 16

Ronald School in North Seattle, Wash. (North 175th St. about one mile west of Interstate 5.)

SWAP MEET: 10:00 A.M.

PROGRAM & MEETING: 1:00 P.M.

All AWA members in the state of Washington and adjoining states are welcome.

For additional information, write or telephone: WARREN GREEN, W7JY
7202 N. Mercer Way, Mercer Island, Washington 98040
Tele: (206) 232-5119

IN TRANSITION:

Beginning with this issue, **Charles Griffen** will replace Dick Waddell as Obituary Editor. Dick, a retired F.C.C. Monitoring Station engineer, will continue to assist. Griffen has deep interest in radio and entertainment history and will be an excellent replacement. Welcome to the *OTB* staff, Charlie.

Cicely Blossom-Smith will also terminate her association with the Bulletin. For personal reasons, she can no longer handle the *Association News* column. Thanks, Cicely, for your help. We wish you happiness in your new venture of motherhood.

And lastly, the Association will lose **Don Ray**, WA2PKS, who has faithfully printed the *Old Timers Bulletin* for 29 years. Don excells in high quality printing and reproduction – a service he once provided for a large Rochester photographic company. He re-worked horrible dis-colored photographs making them almost like the original. Like the retiring editor, he is a Master Craftsman (who has traveled in the *East*) and deserves a vacation.

Neither must we neglect **Joyce Ray** who faced an endless challenge typesetting *OTB* copy with poor punctuation, spelling and sometimes almost illegible writing. Thanks for a great job!

EXTREME ACCURACY

Scientists have determined the rotation of the Neutron star 1937 +21 in the constellation Vulpecula. The star is a pulsar 16,000 light years from earth and rotates faster than any other, spinning at the staggering rate (sends a radio pulse signal) every *.0015578064488724 seconds*! For comparison, it takes the earth 24 hours to make a rotation.

This extraordinary scientific information was determined by the 1000 foot diameter radio-telescope at Arecibo in conjunction with hi tech computers.

-- Horace J. Witherspoon

OTB MATERIAL: If you plan to write an article for the OTB, keep it short. All material running over two pages may be reduced or not printed at all. If you plan a lengthy article, write the Editor for approval BEFORE you start.

COMING EVENTS

NEW YORK

Announcing:

SUMMER MEET

A.W.A. - N.F.W.A.

SATURDAY, AUGUST 6

ELMA CONSERVATION CLUB

Again AWA joins NFWA for a summer "meet"...here's the schedule....let's have a good turnout:

10:00 AM Flea market

12:30 PM Dinner

1:00 PM Program on collecting

2:00 PM Announcement of contest winners.

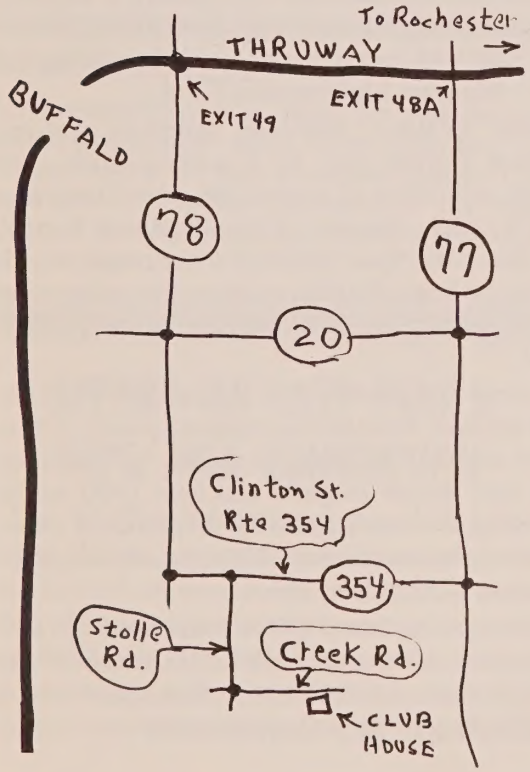
Equipment Contest

Entries accepted between 10 AM and noon. Categories:

1. Crystal sets
2. Early radio catalogs.
3. Advertising material relating to early radio.

Dinner reservations absolutely necessary. Please telephone or write BEFORE July 30th

James Kreuzer (716) 681-3186
6270 Clinton St., Elma, NY 14059



TEXAS

VRPS - AWA CONVENTION '88

Holiday Inn Dallas Southwest

(*Same as last year*)

Friday - Saturday - Sunday
October 21, 22, 23

Schedule:

FRIDAY (Evening)

- Check in items for auction and contest
- Social hour

SATURDAY

- Old equipment contest
- Large auction
- Banquet with Awards

SUNDAY

- Inside flea market

An additional feature this year will be a visit to the relocated "*Texas Broadcast Museum*" which has been re-named "*The National Museum of Communication*". (Friday afternoon and evening)

Registration forms, maps, programs are available from Convention Manager Mike Sherman. Write:

VRPS/AWA Convention '88
P.O. Box 165345
Irving, Texas 75016

NORTH CAROLINA

The 1989 Annual South-East Conference is scheduled for the weekend of April 14 - 15 at Winston-Salem, N.C. Lew Elias, W4DBT, will be host assisted by Ron Lawrence, Bob Lozier and Don Patterson.

MARYLAND

GAITHERSBURG HAMFEST

Montgomery County Fairgrounds

SUNDAY, SEPTEMBER 11

There will be a large AWA booth displaying vintage equipment including a rotary spark gap transmitter!

This exhibit has been a perennial attraction for many years thanks to John Nagle, K4KJ, and xyl Martha. Paul, K4KRE, will assist.

(NOTE: AWA booths are always a favorite gathering place for old timers and collectors.)

27TH A.W.A. HISTORICAL RADIO CONFERENCE

Sponsored by the Antique Wireless Association, Inc.

September 21 to 25 Sheraton Inn, Canandaigua, New York

"In the heart of the beautiful Finger Lakes" (near Rochester)

5 DAYS OF OUTSTANDING ACTIVITIES for the RADIO COLLECTOR-HISTORIAN

- **4 large auctions plus the world's largest antique flea market**
- **programs for ladies, dinners and other attractions**
- **equipment contests, exhibits and seminars**
- **5-star program with:**

-- **High Voltage Techniques** (Demonstration)
Jim Hardesty (Ithaca, N.Y.)

-- **The Microphone: Development and Identification**
Bob Paquette (Milwaukee, Wis.)

-- **Vacuum Tube Seminar: Unusual tubes and their value**
Lauren Peckham (Breesport, N.Y.)

-- **Unusual Radio Collections in Italy**
Bob Lozier (Monroe, N.C.)

-- **Collecting and Identifying Silver-Marshall Products**
Larry Flegle (Atlanta, Ga.)

-- **The KDKA Story**
Dick Brewster (Pittsburgh, Penna.)

REGISTRATION CARD and PROGRAM in BULLETIN.

(Note: Advance registration advisable.)

RARE DOCUMENTARY TO BE SHOWN AT CONFERENCE

Thirty years ago a group of AWA photographers visited the few remaining East coast high power VLF stations. Equipped with movie and 35 mm. cameras, a professional tape recorder and a 4 x 5 Speed Graphic, they recorded what may be the last known account of these historic operations.

Highlights:

- German station at Tuckerton
- Tuckerton's counterpart at Elvisee, Germany (copies)
- Marconi-RCA station at New Brunswick (Ralph Thomas, W2UK, Manager)
- A visit to German Sayville station site
- RCA Rocky Point
- RCA Riverhead and Dr. Harold Beverage
- Marconi-RCA station at Marion (Sound of Alexanderson alternator in operation)

PRIVATE COLLECTION TO BE AUCTIONED AT CONFERENCE

This year's Conference will feature a separate auction of early wireless equipment from a private collection with part of the proceeds benefitting the AWA Museum Maintenance Fund.

Items include: DeForest spherical audions, Marconi Leyden jars, E. I. window-shade condenser, collection of mineral detectors, including W.S.A. triple detector, Clapp-Eastham Ferron, etc., Duck Navy and Murduck loose couplers, collection of keys, English commercial coherer receivers and unique spark transmitter circa 1908-1910.

Adams-Morgan RA-10, CR-5, British WWI aircraft receiver, three Morse registers: pre-Civil War model actuated by cord and weight, early windup type with double magnets and later 1900 model owned by Dolbear's son, 10,000 volt spark transformer (to be tested), SE-1420 (with missing components), loudspeaker, etc.

The regular auctions will offer an operating 1000 watt spark transmitter, HRO-500 receiver and other goodies. Admission to auction requires both a registration badge and auction card.

Emerson Radio Hall of Fame

Inaugural Induction Ceremony

Many old time radio personalities and stars were recently inducted into the Emerson's Hall of Fame. Several AWA members were present and report it was a gala occasion. Here are names of the past that were given recognition for their contributions to radio:

Newscasters - Edward R. Murrow
Radio Personality - Bruce Morrow
Martin Block
Adventure Series - "The Lone Ranger"/
Fran Striker
Comedy Series- "Amos 'n' Andy"/
Charles Correll and Freeman Gosden
Technology - Guglielmo Marconi
Anthology Series - "Mercury Theatre on the Air"/
Orson Welles
Sportscasters- Don Dunphy
Bill Stern
Quiz Shows - "You Bet Your Life"/Groucho Marx
Mystery/Suspense- "The Inner Sanctum"
Bandleaders - Benny Goodman
Variety /Talk Show - Arthur Godfrey
Comedy - Fred Allen
Daytime Drama -"Ma Perkins" /Virginia Payne
Innovators in Music - Alan Freed

A special occasion was the:

Distinguished Lifetime Achievement Award to William S. Paley

The reception was held on the Empire State Building's 86th floor. Stephen and William Lane of the Emerson Radio Corporation are to be commended for their efforts in recognizing radio's "greats" of the past.

REPORT ON LAST YEAR'S VRPS/AWA CONVENTION

The VRPS/AWA Convention '87 held in Dallas, Texas, was a resounding success with a large turnout of members, especially fine entries in the old equipment contest, and an auction at least half again larger than the previous record. The total registration was 120 members; these together with wives and guests brought the total attendance to just under 200. This Southwest Regional Meet held annually in Dallas is intended to serve the members in the Southwest who cannot get to the Canandaigua Conference. It has been doing that for a number of years, but the word apparently is getting around to other parts of the country. This year's 120 members came from:

Dallas/Ft. Worth Metroplex Area	46%
Total State of Texas	79%
Ten other states plus two foreign countries	21%

States represented included the nearby states of Louisiana, Arkansas, Oklahoma and New Mexico as well as Kansas, Colorado, Ohio, Georgia, South Dakota and California. The overseas members were from England and Sweden.

The Old Equipment Contest was divided into seventeen categories plus an innovation this year, an open display category, which was judged by ballot vote of members. From a field of over 80 entries, which included some very rare Marconi and Mesco equipment, the judges awarded ribbons and trophies to 58 lucky winners. These were presented at the Awards Banquet Saturday night. The Guest of Honor at the banquet was Bengt Svennson from Sweden, who presented a very interesting talk and 16 mm film describing the 200 KW Alexanderson Alternator still in operation in Sweden.

The auction occupied all of Saturday afternoon (plus part of the evening). 628 items were offered for sale with 528 selling. A number of nice pieces were put up for sale. The highest bid was $1200.00 for an early English spark transmitter with Marconi tag and serial No. 90.

Sunday morning topped off the event with an indoor Swapfest that was packed. A very nice matched panel DeForest Interpanel showed along with an early military BC-7 unit. There were also crystal sets, both foreign and U.S. and some very early tubes.

The Convention officers would like to thank all members who attended and participated, and particularly to invite them and all other members to VRPS/AWA Convention '88. This year's event is scheduled October 21, 22 and 23. Details elsewhere in this Bulletin.

ENGLAND

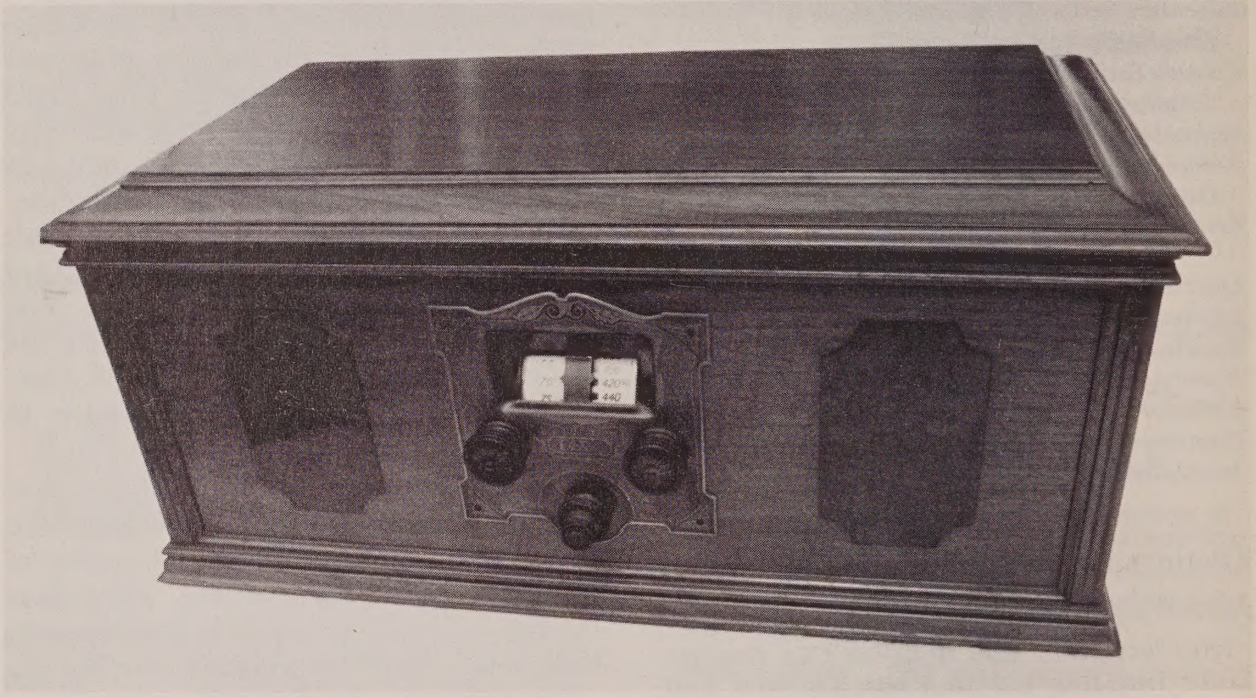
Plans are being made for another joint meet with the British Vintage Wireless Society in London. Information in future Bulletins.

PROBLEM SOLVERS

Carl Ziegler
Fairport, N.Y.

RESTORING A FADA 460S

by Bob Haworth, W2PUA, Somerdale, New Jersey



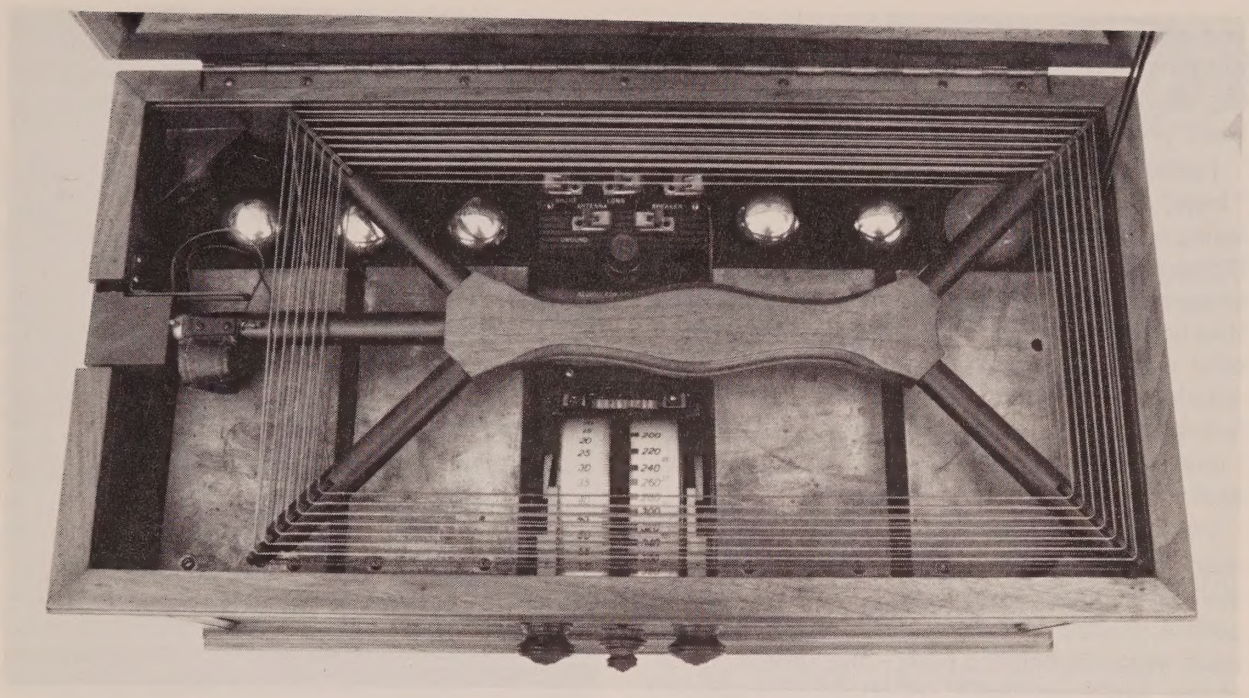
"*Whatever could have prompted you to tackle this project?*" was the question I asked myself over and over during my restoration of a FADA 460A.

In the fall of 1985 I had casually asked my friend and co-worker, AWA member Clay Seidel, if he happened to have a radio – preferably one with a loop antenna– that I might restore. Clay, who has won countless gold, blue, and red ribbons for his restorations, generously provided me with a FADA 460A, vintage 1927, from his still-to-be-worked-on inventory. He must have known that this particular unit would pose a "*sink-or-swim*" challenge to a neophyte restorer of battery sets like me.

I approached my "*contest on the field of honor*" fresh from victories over a number of Hallicrafters Communications receivers. This time, I was anxious to preserve for posterity a truly "*old-time*" battery-operated radio – one which would also make an attractive conversation piece for the living room.

The hardwood cabinet of my newly-acquired 460A had deteriorated badly in the years since its manufacture. The cabinet's crushed and missing corners made it look as if it had been used in some sort of drop-testing program! Nevertheless, with confidence in my woodworking skills, I roared ahead. After all, without determination man can accomplish nothing. As the next eight months were to prove, money helps also!

I decided that the cabinet and electrical components of the set should receive equal attention, since to concentrate on one while neglecting the



Top view with antenna folded into cabinet.

other would leave me with either a shabby-looking, but fully operable set, or an attractive, but impotent hunk of furniture. To me, settling for either of these options would be like drinking fine wine from a jelly jar.

Restoration of the cabinet presented no major problems once I had hunted up some pieces of walnut wood of sufficient thickness and quality for my purpose and had learned to manipulate the many small clamps which were necessary to hold the carefully-shaped walnut in place while the wood glue dried.

After the damaged corners had been painstakingly replaced with new wood and the cabinet's laminated sections patched and reglued, the real test – refinishing – was upon me. I armed myself with a popular commercially-available furniture-refinishing kit – one whose proper use, the package proclaimed, would "*make refinishing to the original shade and lustre a snap*". Instead, my mind almost snapped! Commercial promises or no, after a number of frustrating failures I simply couldn't get my hand-crafted corner replacements to present the same color as the original wood. I might, at that point, have studied upon the more subtle secrets of furniture refinishing and had another go at it myself. However, impatient to begin restoration of the FADA's electrical outfit, I decided to have the cabinet professionally refinished. A couple of weeks and fifty dollars later my cabinet troubles were over. The pros succeeded brilliantly in matching the color of the walnut; the closest inspection was needed to detect the fact that the corner pieces I had attached were not the originals. I was pretty proud of that cabinet.

The radio components themselves presented an entirely different challenge. Those familiar with the 460A and its contemporaries know that thin, die cast metal parts were commonly used to support tuning shafts, volume controls, and so forth. The ravages of time and temperature often cause such parts to distort severely, weakening even to the point of disintegration – thus satisfying the "*dust to dust*" equation of creation. This may be the main reason that, as I suspect, only a handful of 460As are around today. For example, the dozen or so thin, die-cast zinc pieces used in my unit to support the tuning capacitor drum and volume control had distorted so badly that the tuning system refused to budge. I also found that one of three supports for the loop antenna had gone AWOL at some time in the distant past; the years had rendered the remaining two dangerously fragile.

The 460A has two independent dial-drum assemblies. Each drives a short shaft (at a right angle to the drum) which controls the rotors of a tuning capacitor. Each shaft terminates in a metal RF enclosure. In the enclosures are located the set's capacitors, tuning inductor, and variable-coupling, interstage-feed capacitors. The whole package looks surprisingly like a series of upright telephone books pierced by an arrow.

In studying the FADA's tuning arrangement, I reached two conclusions: first, that the set's designer, F. A. DeAndrea, and his engineering staff had been extremely skilled; second, that they must have been confident their unit would last the ages, since they failed to provide for an easy way to disassemble it. I knew, at least, that in order to replace the disintegrating zinc supports those shafts – upon which most of the other components hung – would have to come out. An entire can of WD-40

(Continued on next page.)

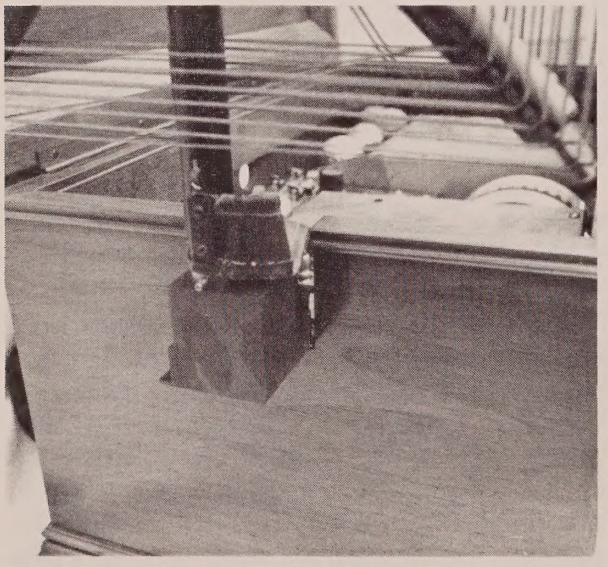
and several hours' determined tugging were required to accomplish this ticklish extraction, during which the zinc supports I had hoped to copy went, predictably, to pieces.

I attempted without success to reconstruct the "*look*" and dimensions of the destroyed parts by laying out what remained of the zinc on a table and fitting fragments together like a jigsaw puzzle. I wracked my brain, trying to remember *just how* they had been positioned and how big they were. I tried estimating the parts' dimensions by considering their position in relation to the shafts, drill holes, etc. I knew no one with another 460A which I could consult. If only I had taken a few clear, scaled photographs before diving in!

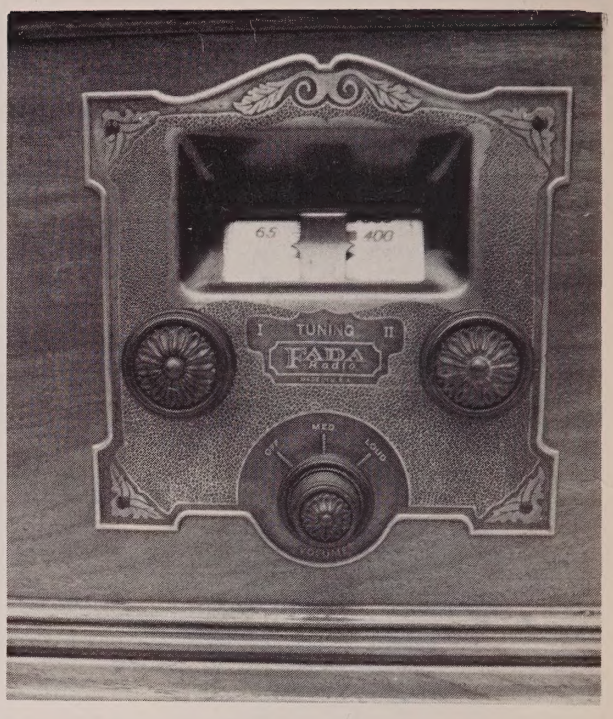
I finally conceded the game and spent several evenings designing replacements for my vanished die-cast supports from scratch. A great deal of patient, precise measuring was needed here, even more when the finished parts – this time made of cheap, easily-machined, yet sturdy aluminum – had been delivered to me. After some filing and tinkering, installation was complete. (My wife Jean, incidentally, lost again; if the expense of having the FADA's cabinet refinished had "*cost her a new set of curtains*", this time the machinists' fee consumed an addition to her spring wardrobe. *C'est l'amour* ...).

The FADA's twin tuning drums now moved smoothly, variable capacitors tracking with them. It felt good to have been able to improvise a workable solution to the problem of the supports; I hadn't even strayed too far from the original appearance of the castings.

I turned my attention to the remaining circuitry of the 460A. A quick check with an ammeter revealed that only one of the unit's six bypass capacitors still worked. I concluded that dust and moisture, through the years, must have penetrated



End view showing antenna support.



An impressive dial.....

the unsealed, waxed-paper-and-tinfoil units, short-circuiting them. To remedy this situation I first carefully pried off the crumbling brown waxed-paper top of each capacitor "*can*", then boiled each unit until the wax inside melted, releasing the capacitor. Several days later I placed new, sealed capacitors in the cases and poured the original wax back in. (In the meantime, my wife had also come to a boil; the house smelled like a candy factory throughout this process.)

The wire of my FADA's loop antenna was still strung in its original, complex configuration. It had obviously stretched somewhat, however, and had become too frayed for me to consider retaining it. I refinished the unit's collapsible antenna frame and had fun stringing new wire of the same gauge and appearance on it, to the pattern of the original.

I was getting close to being able to display DeAndrea's beautiful contraption in a certain niche in the living room which I had picked out especially for it. I found myself re-arranging furniture so that the FADA could not fail to be the center of attention. All it needed was a final test...

I replaced the FADA's long-dead battery with a series of modern cells of equivalent power. The 460A worked perfectly the first time. What a feeling! I did nothing that evening but sit with it in the kitchen, just dialing around, listening. When you've done something you're really proud of in our hobby, you suddenly have lots of time for that.

CORRECTION:

The word "cascade" should be "cascode" as used in the AFT replacement article (OTB p.16, May, 1988).

RECENT RADIO and ENTERTAINER OBITUARIES

by Charles Griffen

ROBERT HOAG (69 yrs.)
CBS program director.

RAY POINDEXTER (65 yrs.)
Manager KDRS,KNBY,KVLC,radio author.

LANNY ROSS (82 yrs.)
Favorite radio tenor.

IRENE RICH (96 yrs.)
Movie & radio actress ("Dear John").

HUGH KNOWLES (83 yrs.)
Inventor: developed hearing aid.

JAMES BRENNAN (75 yrs.)
RCA engineer

R.H. HINCKLEY (96 yrs.)
Former ABC director

JULIAN MILLER (86 yrs.)
Western Union executive

HENRY DUNPHRY
Headed FCC Monitoring Station

HAROLD DE VOE (80 yrs.)
Headed FCC Alaskan Monitoring station.

JOSEPH FISHER (76 yrs.)
Television specialist.

ERNEST JERVIS (82 yrs.)
Vacuum tube authority.

JOHN BRAINARD (83 yrs.)
Assisted in development of EINAC.

NEWBERN SMITH (78 yrs.)
Propagation expert.

LOIS WILSON (93 yrs.)
Silent film star.

ROBERT BROWN (82 yrs.)
TV announcer and producer.

GEORGE VOLGER (73 yrs.)
Demonstrated TV at 1939 World's Fair

MARGERY THOMAS (87 yrs.)
Actress in radio "Soap Operas" '30s- '40s.

ENZO TORTORA (59 yrs.)
Popular TV star in Italy.

STEVE SWEDISH (83 yrs.)
Bandleader: Cantor,Benny & Hope shows.

GEORGE HARVEY (80 yrs.)
M.I.T. scientist.

HARUO SHIKANAI (Tokyo) (42 yrs.)
Chairman of Fuji Communications

HENRY WHITE (80 yrs.)
TV executive

HUGH BEVILLE (79 yrs.)
NBC research executive

JACK SCHOLL (85 yrs.)
Songwriter: "It had to be you", etc.

SY OLIVER (77 yrs.)
Band arranger: Lunceford & Dorsey

PHILIP HALE (64 years)
Director at stats. WRYM,WRCH,WKNB

BILLY BUTTERFIELD (71 yrs.)
Trumpeter with Goodman, Crosby,Shaw.
Member of CBS and NBC studio bands.

JIM JORDAN (91 yrs.)
Radio's "Fibber McGee (and Molly).

J. DOUGLAS GAY (77 yrs.)
Co-founder stats. WLEX, Dir. WCOV

ROBERT GORALSKI (60 yrs.)
NBC & VOA news correspondent.

GIL EVANS (75 yrs.)
Arranger-composer ABC,NBC orchestra.

DE WITT BODEEN (79 yrs.)
TV screenwriter

OLIVE CAREY (92 yrs.)
Actress/widow of movie star Harry Carey

AMAPOLA DEL VANDO (78 yrs.)
TV actress "I Love Lucy","Border Patrol"

JAMES OLSON (62 yrs.)
Chairman AT&T

ATWATER KENT Jr. (79 yrs.)
Son of Atwater Kent Co. founder.

DAVID SCHOENBRUN (73 yrs.)
CBS Foreign Correspondent.

WILLIAM DEMPSEY (81 yrs.)
Former F.C.C. counsel

LARRY SHAY (90 yrs.)
NBC program director.

JOSEPH FISHER (76 yrs.)
Pioneer TV engineer at Philco and NASA.

BYRON ROUNDABUSH (80 yrs.)
Television pioneer.

SIDNEY HARMON (80 yrs.)
TV play producer

GEORGE CHARLES (69 yrs.)
Producer TV "Show of Shows", "Colgate Comedy Hour", "Tonight Show", etc.

"ROBBIE" ROBINSON, W4QR (80 yrs.)
Former partner Gonset Co., etc.

WALTER RICHARDS (81 yrs.)
Prog. producer:"Lux Radio Theater",etc.

ERNST RUSKA (81 yrs.)
Inventor electron microscope,Nobel Prize.

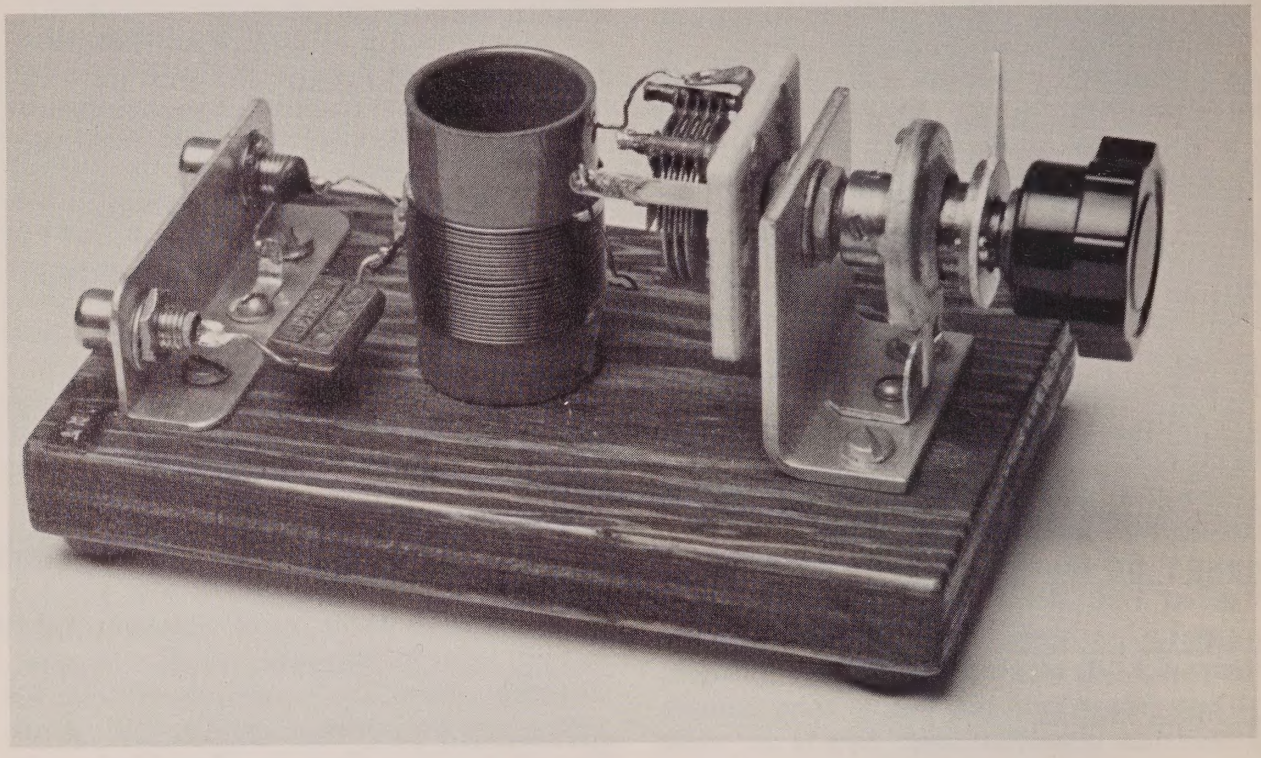
BILL DORAIS (76 yrs.)
Radio-TV newsman in San Francisco

SAM NEWMAN, W3HN (80 yrs.)
Retired Chief Engineer WRC

LARRY SHAY (90 yrs.)
Composer:"When You're Smiling", etc.

DC CRYSTAL SET RECEPTION IN 1988

by Roy Usher, VE6EA,
St. Albert, Alberta, Canada



I am sure that some of the old-timers and most of the newer fellows will just laugh at the idea of listening to long distance short wave broadcasting stations on a crystal set. I have been doing this for several years now and it's easy. The circuit is shown with pictures. All you have to do is plug the sets into an audio amplifier, and use a suitable antenna.

I have several wire antennas; one for 20 meters, one for 30 meters and another for 40 meters. There is nothing special about them – they are all ordinary half wave dipoles with RG58 co-axial feeders. They are various heights but all are in the 20 to 40 foot range. I use whichever gives the strongest signals. They are all connected to a rotary co-axial switch for convenience. The same antennas are used for the appropriate amateur bands where they do the job for the bands they were made for.

A glance at the simple circuit will show that there is nothing complex about it. The important point is to tap down on the coil where the detector, which is a 1N34, or almost any point type Germanium diode, is connected. If you listen to the signal on a pair of headphones, the signal will be quite strong; it will be somewhat weaker on the short-wave model. I can hear broadcast stations as much as 75 miles away. Best results will be obtained with good high resistance phones – 2000 ohms or more. The tap on the coil should be from ⅓ to ½ of the total

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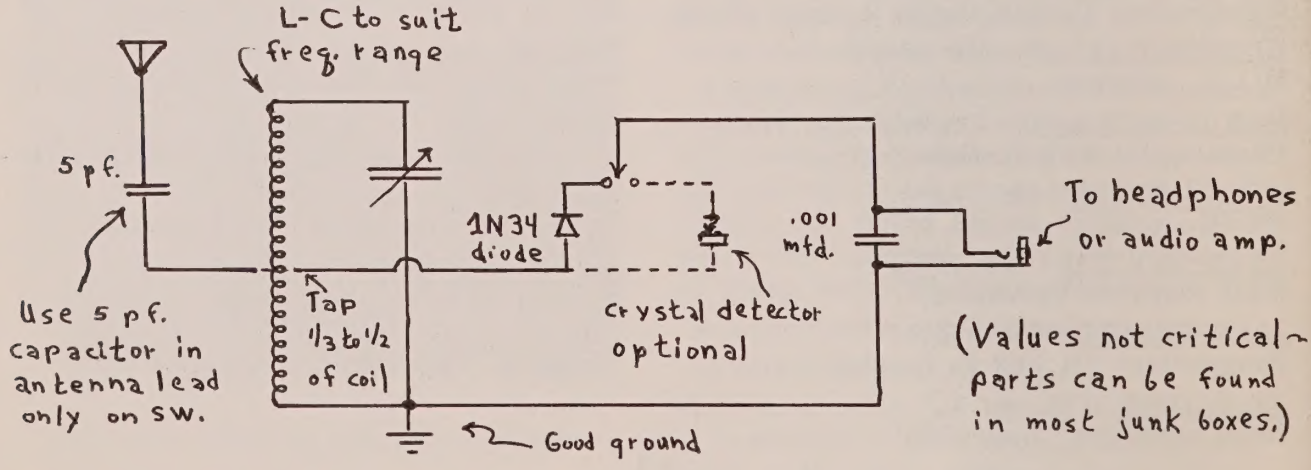
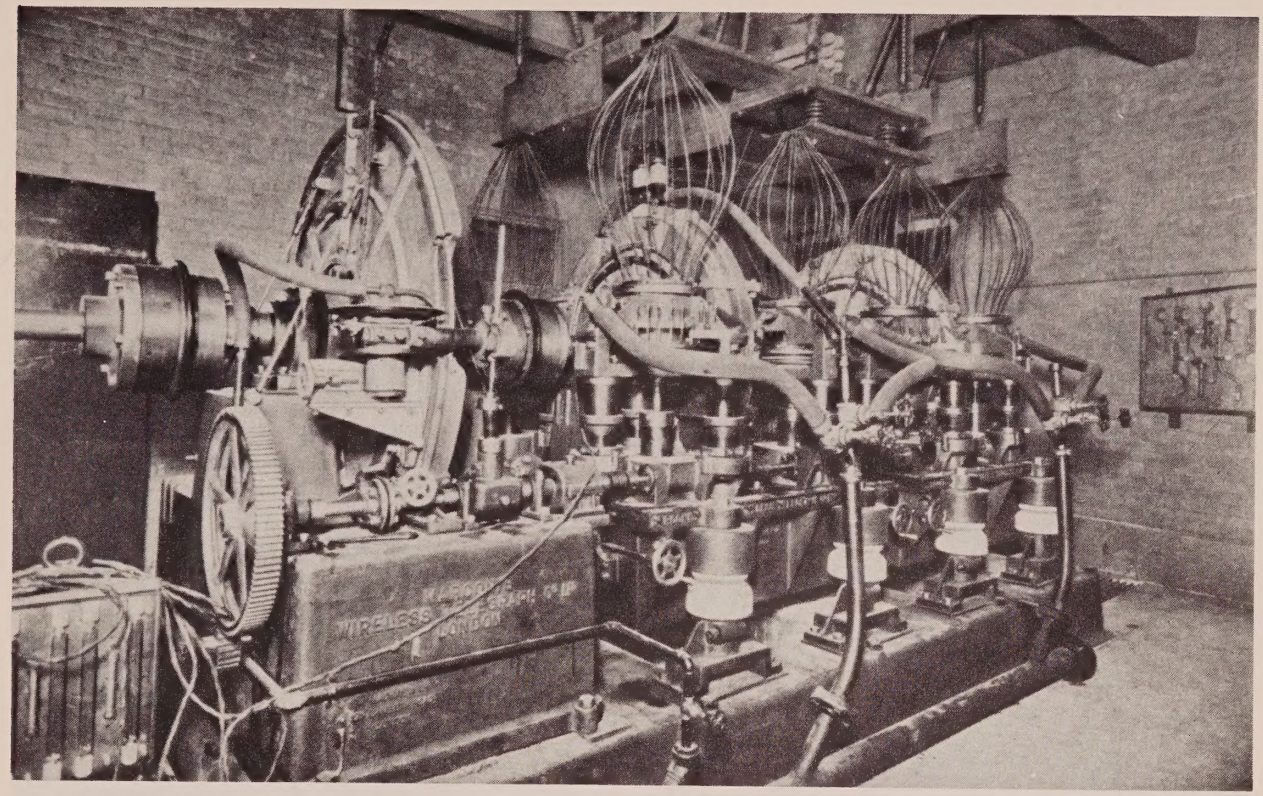

L-C to suit freq. range
5 pf.
Use 5 pf. capacitor in antenna lead only on SW.
Tap 1/3 to 1/2 of coil
1N34 diode
.001 mfd.
Crystal detector optional
To headphones or audio amp.
Good ground
(Values not critical – parts can be found in most junk boxes.)



MARCONI TIMED-SPARK TRANSMITTER AT MARION, MASSACHUSETTS

Art Goodnow's excellent treatise on spark transmitter operation (*AWA Review No. 2*) aroused much interest with radio historians. Some have wanted to know if there were timed-spark transmitters in the United States.

The answer is yes, but they were short-lived due to circuit and operation complexity. Pictured is the transmitter at Marion, Massachusetts which was placed in operation shortly before WWI. The Marconi Company called it a "*continuous wave*" transmitter for this reason: Ordinary spark transmitters set up a rapidly recurring series of waves, each series dying out before the next commences.

In the timed-spark system the second series of waves commences before the first has appreciably diminished, and in the same way the third overlaps the second, the fourth the third and so. The interval between the commencement of each series is such that the effect is additive and a steady continuous flow of energy results.

-- Bob Allen

(Crystal Set Reception- Cont.)

turns, although this is not too important if the little receiver is plugged into an audio amplifier with a high impedance input resistance of 100K ohms or more. In my case, the amplifier consists of a 6BH6 into a 6AQ5 with about 150 volts on the plates – output about 1 watt. When short-wave reception is good, full loudspeaker reception can be obtained. The old-fashioned galena detector is optional. Tune in with the 1N34 diode and then switch to the early detector for early operation or comparison.

I have built several of these receivers and all that is necessary is a good coil wound with wire as small as #30 on the broadcast unit, and #24 on the shortwave one. You may be surprised at how much current flows through the headphones, especially on the broadcast model, when a strong local station is tuned in. The closest station to my location is about 15 miles away and operates on 1260 KHz. and is powered at 50Kw. The current through the phones is as much as 200 microamperes; you can't wear the phones over your ears!

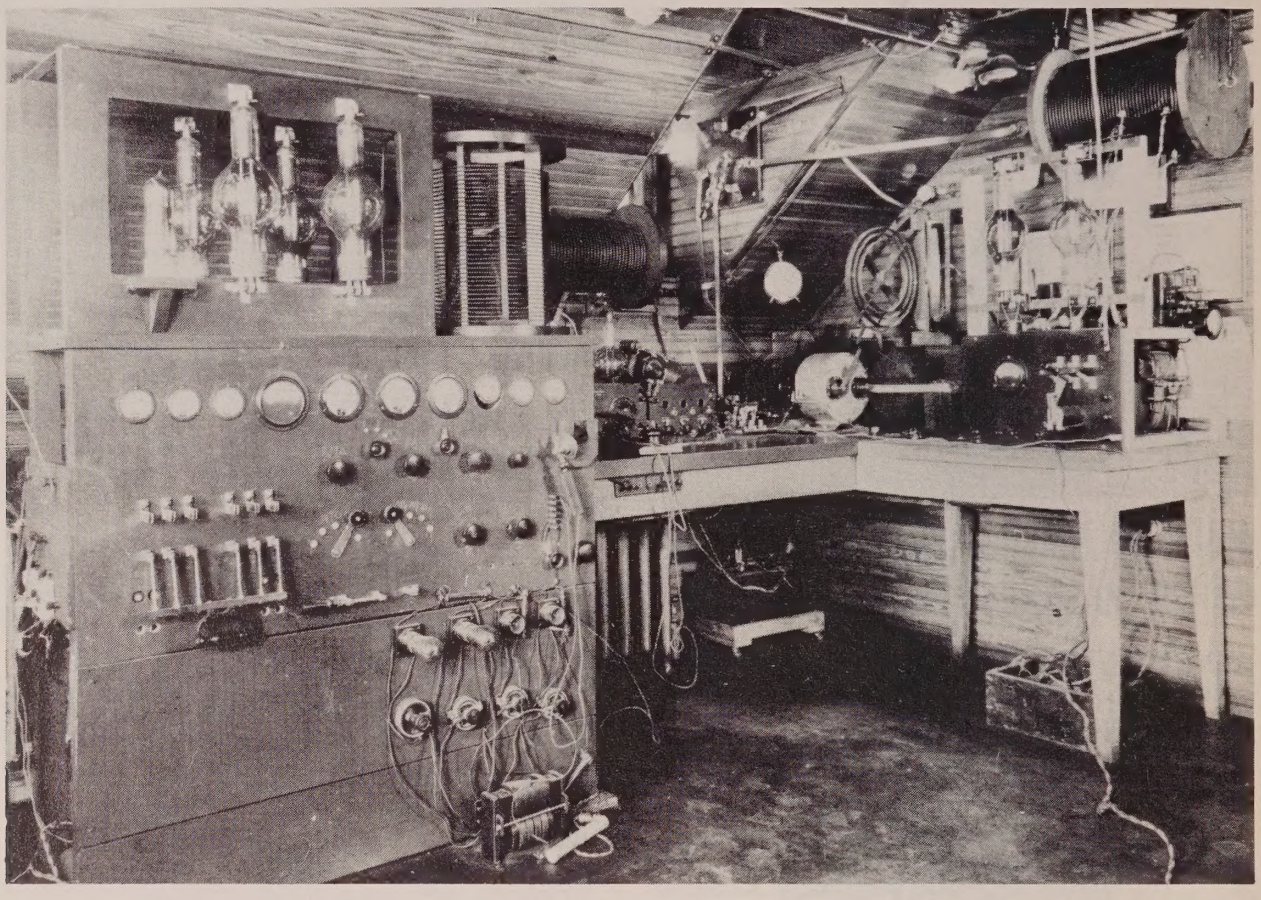
What can I hear on the short-wave one? How about KGEI, San Francisco, and Havana, Cuba; several stations in Florida and even Moscow, USSR.

You should remember that these sets are not very selective; if you are listening on the broadcast model you may not be able to separate them. If they are 25 miles or more away, the results are good. I built my first crystal set in 1923 – the signals were not very loud, but we had no 50Kw stations then!

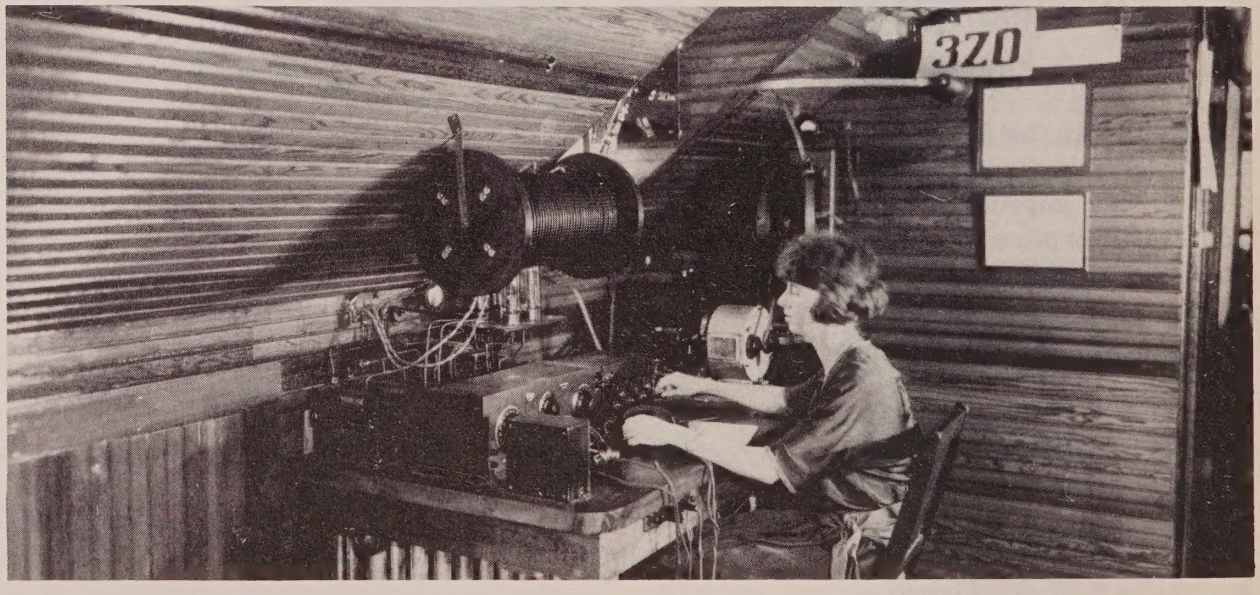
3ZO: SUPER-STATION OF 1922

There have been many super-stations through the years. A recent example was Don Wallace's rhombic farm at W6AM. Today, it is not uncommon for some of the more affluent amateurs to have several 200 foot stacked rotaries with the latest computerized gear – but what was a super-station like in 1921 or 22?

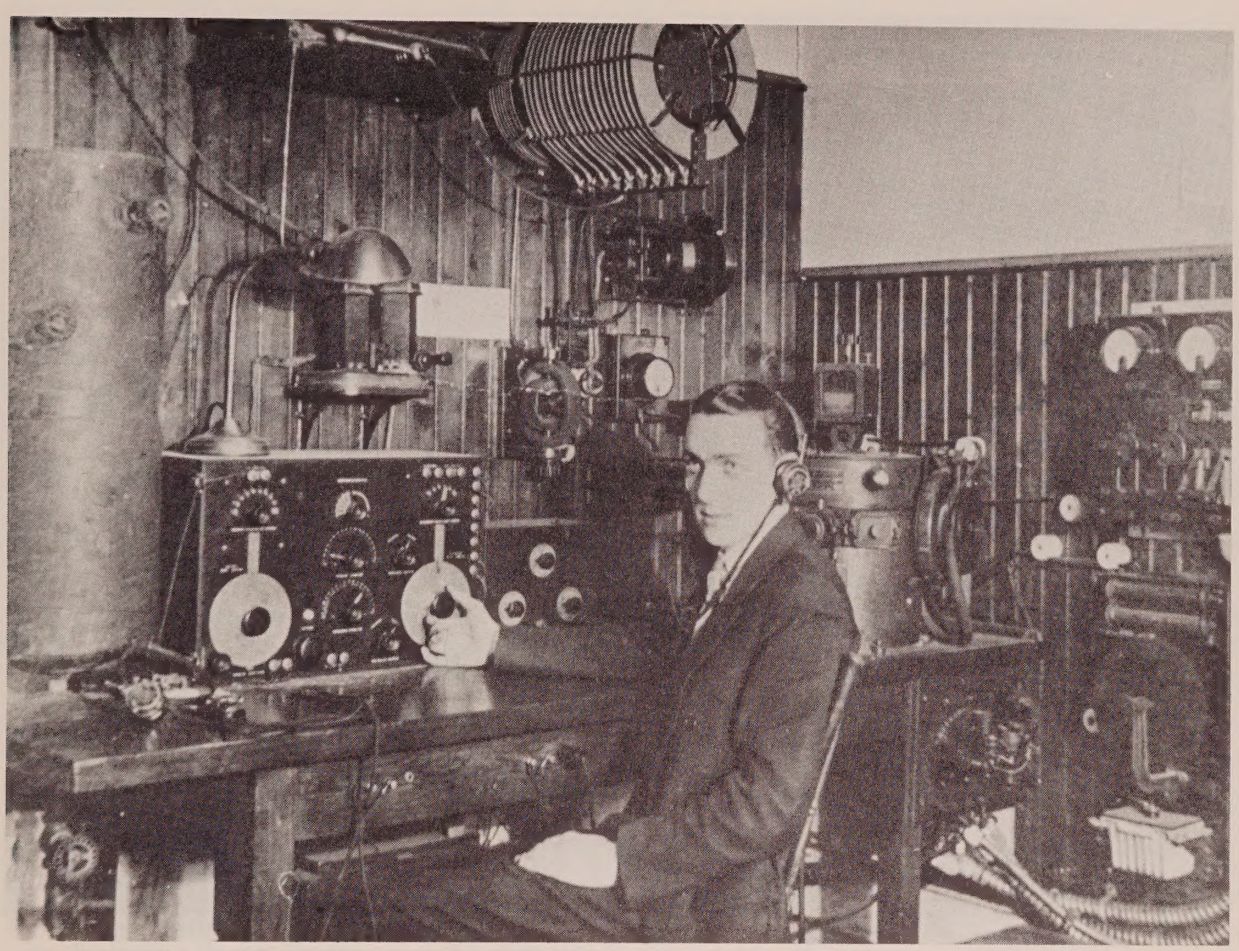
A splendid example was 3ZO owned and



The modern 1000 watt radiophone transmitter (super-power for the time) using a pair of UV-204's Heising modulated by another pair and driven by a 203. Of interest, most broadcast stations of this period were still running only 50 watts!



Several operators manned the station with AWA member Tom Appleby, W3AX, (now deceased) as chief engineer. Pictured is Bertha Hilton, a crack CW operator, at one of the several amateur transmitters.



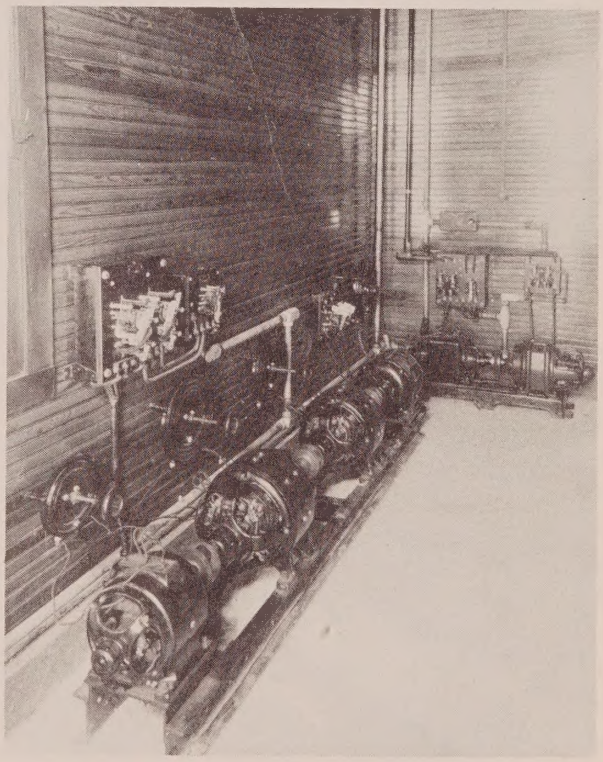
This is the medium-wave section of the station with H. Boyd Cowan as operator. Note the IP-500 receiver and DeForest arc transmitter for 2500 meter operation as 3XW. Fifteen different transmitters were in operation during the few years the stations were on the air.

operated by Horace Beale Jr. of Parkersburg, Pennsylvania, as described by Rex Matlack, W3CFC, at the recent AWA Conference. For those who may have missed Rex's talk, here is a brief description of the station.

Your first impression would be an open field with two 185 foot steel masts supporting a huge 375 foot, 5-wire flat-top antenna. Near the foot of one of the masts was a two-story building with the upper floor devoted to equipment. The lower floor housed a kitchen, sleeping quarters and additional operating rooms. All rooms were lined with sheet zinc for shielding and covered with varnished wainscoting.

The station sported several calls for the various transmitters: 3ZO, 3XW, 3OI and broadcast station WQAA. 3ZO went off the air in October, 1926, after the death of its owner. The pictures will tell the rest of the story. For additional information, see May, 1922 *QST*.

(Continued on next page.)



The motor-generator room on the lower floor. This was before high voltage power transformers and rectifiers were common for plate supply.

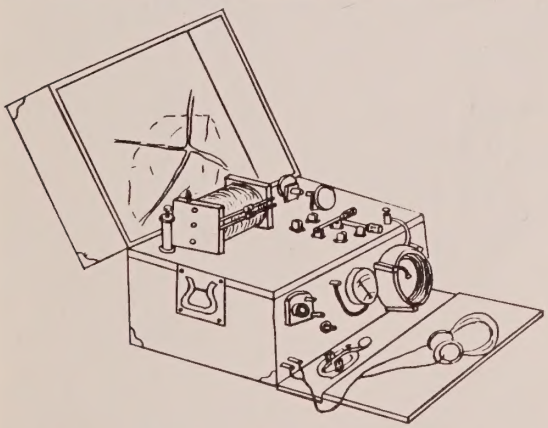
LEARN RADIO THROUGH CHESTER CO. RADIO ASS'N
HEAR THE NEWS OF THE WORLD JOIN CHESTER CO. RADIO ASS'N PARKESBURG, PA.
CHESTER COUNTY RADIO ASSOCIATION.

The mobile or portable station "3OI" was located in a small building mounted on a heavy-duty 3-ton Riker truck with solid rubber tires.

Interior of mobile station. At left is a Grebe CR-5 receiver with RORK amplifier. The transmitter is at right with windup phonograph for broadcasting music. Note the kerosene stove and Delco power plant.

SEEKING INFORMATION

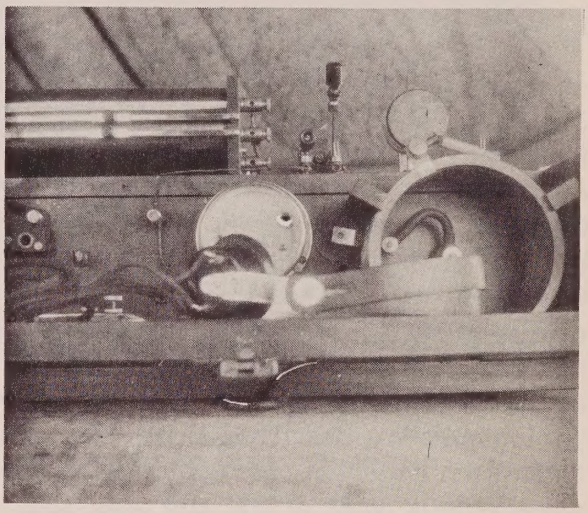
The history of radio teaching and broadcasting at Queen's University in Kingston, Ontario, goes back to a lecture-demonstration of wireless given by Lester W. Gill, Professor of General Engineering, at Science Convocation in April, 1902. The apparatus, of unknown manufacture, had a bell for a sounder and probably a coherer detector. Gill's Master's student, Bernard E. Norrish, produced a thesis titled "*Wireless Communications*" in 1910. For the introduction of a formal course on W/T in 1912, Gill purchased one and possibly two W/T sets from Clapp-Eastham. A Queen's W/T set was used in signals training at the Barriefield War Camp, near Kingston, from 1915-17, and two photographs were taken of it by the Rev. Dr. W. Harold Reid. The photos may not be of the same set. Dr. W. Donald MacClement remembers the set from his boyhood, and has made a sketch based on the two photos. I have also located the application to obtain a license for the set at Barriefield in 1916, and I know that they were granted the call XWD by the Department of the Naval Service.



The Rev. Dr. Reid remembers the set as a ¼ kW transmitter/receiver, with a crystal detector, enclosed in a small, well-made wooden case, about 12 x 20 x 10 inches high. From the close-up photo, the ammeter shows 3 amps full scale.

The license application, dated June 13, 1916, says "Clapeastam 25 - 50 M portable set", the same set for transmission and reception, range 20 miles. Maximum power to be taken by transmitting instruments "60 cycles - 110 volts, 500 watts primary". It would use power from the city mains, and had an inverted L antenna.

Dr. MacClement recalls the W/T set as a neat reddish mahogany box with brass corners and handles. The lid extended over the front edge of the box and locked with a front flap that came up above the top surface. The tuning coil had square rods and there was a frame with a crystal detector in it that pulled out. There was a single coil, a flat-wound ribbon with connections that you could clip on around it. The key was on a block mounted on the edge of the flap.



I would appreciate any help in determining the origin and further details of this W/T set. The components look like Clapp-Eastham, and the license application says "Clapeastam", but was the set itself manufactured by Clapp-Eastham, and was it a catalogue item?

Arthur E. Zimmerman, Radio Station CFRC,
Carruthers Hall, Queen's University,
Kingston, Ontario, Canada K7L 3N6

WHAT IS IT?

Page 22, February OTB tells of a "*Mystery Tube*" – a 4-element tube resembling a 201-A with UY base. The tube has been positively identified by Cliff Meyers, W3YS, as a Type 49. It is listed as a dual-grid power amplifier and not a screen-grid type. Two were frequently used in battery receivers as Class "B" audio amplifier. The filament was rated at only 2.0 volts at .12 amps.

Cliff says the tube gained temporary interest among experimenters when AWA member Roy Usher, VE6EA, published a 1937 article in the Experimenters Section of QST telling how the tube made an excellent 1-tube regenerative receiver since it would oscillate with very low plate voltage.

IDENTIFICATION and VALUE

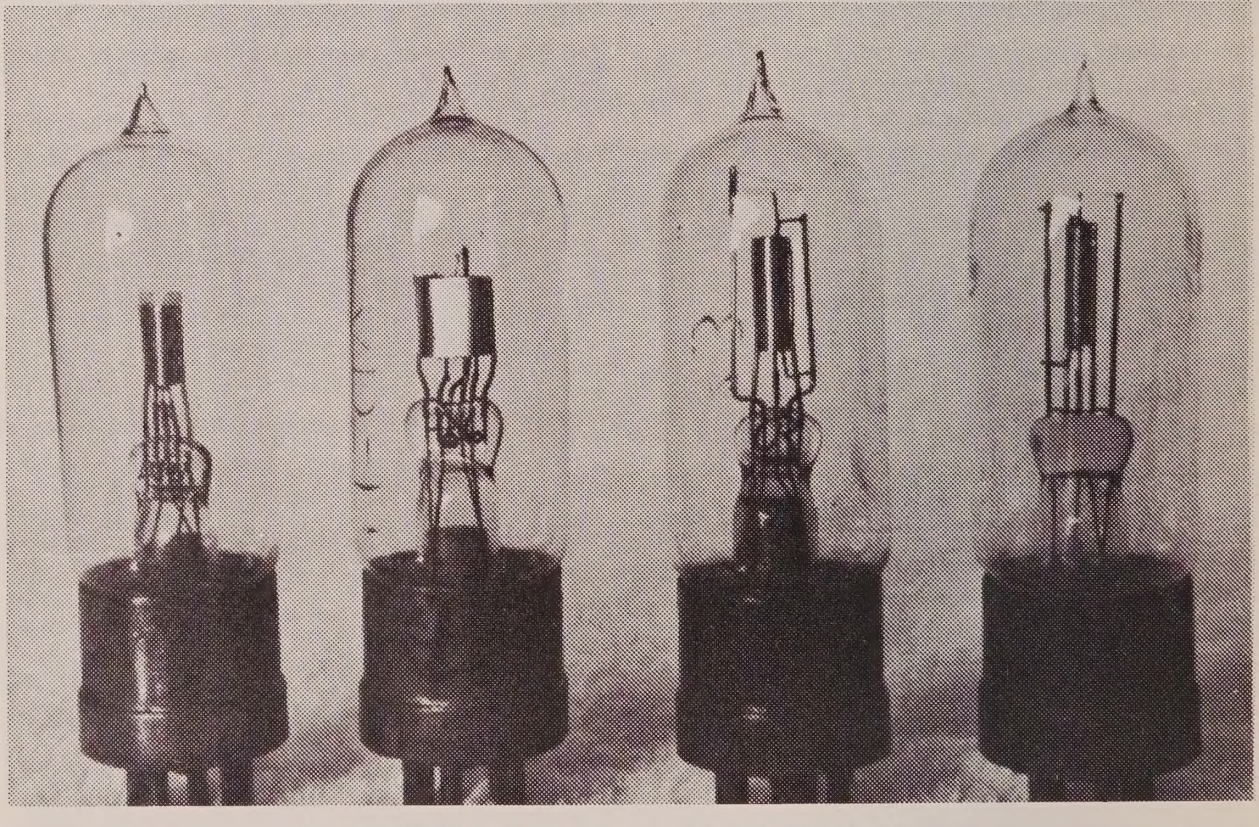
Editor: Lauren Peckham
Ormiston Road, Breesport, NY 14816
All correspondence requires SASE for reply

COLLECTING DEVELOPMENT TUBES

Experimental vacuum tubes have been of interest to me since 1968 when I acquired several samples made by the Westinghouse Company. Identification was difficult as there were no markings, but thanks to Howard Schrader, some progress has been made. He obtained a notebook from Lee Sutherlin, who had worked on the development of the WD-11. Nearly all of the samples shown in the two photographs are described along with data taken from hundreds of test runs of triodes using various types of grid and plate structures.

Several types of filaments with special coatings are also mentioned. Westinghouse also tried several base styles before settling on the final design of three small and one large pin. Early production runs of the WD-11 used a cork inside the press to keep the lead-in wires separated. It is difficult to place a value on experimental tubes, but it is a fact that such samples are far more rare than those made for sale to the public. The external grid type shown in the photograph is worth well over $100.00. The triodes with different types of plates and various methods of support should have a similiar value.

Note: Much of this information appeared in the **AWA Fact Sheet** in April, 1978.



WESTINGHOUSE WD-11 DEVELOPMENT

Left to Right: 1. Sample showing improved support of element structure and special plate design. (mid 1921) 2. Oval plate, experimental. (mid 1921) 3. Sample shows spring supported filament and plate size nearing final design. (late 1921) 4. Tube at far right is design accepted for mass production and was the result of experimental type T-88. It was put on the market in December, 1921 for use in the Aeriola Sr. receiver. The tube in the photo was made after November of 1922 as the Sutherlin lime getter can be seen on the press.

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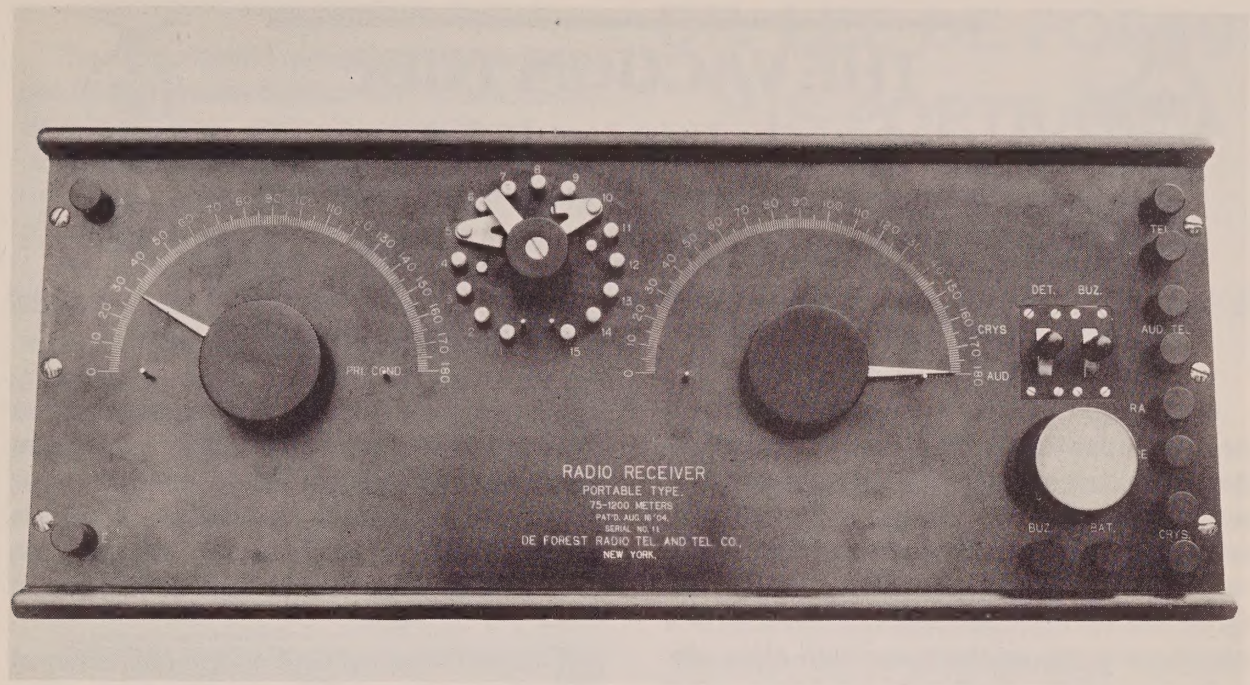

THIS IS A RARE RECEIVER

Every now and then someone will boast about having a rare receiver. If you have the above DeForest set in your collection, you're entitled to brag. Try and find one!

-- *Jeff Stedwell*

IDENTIFICATION and VALUE

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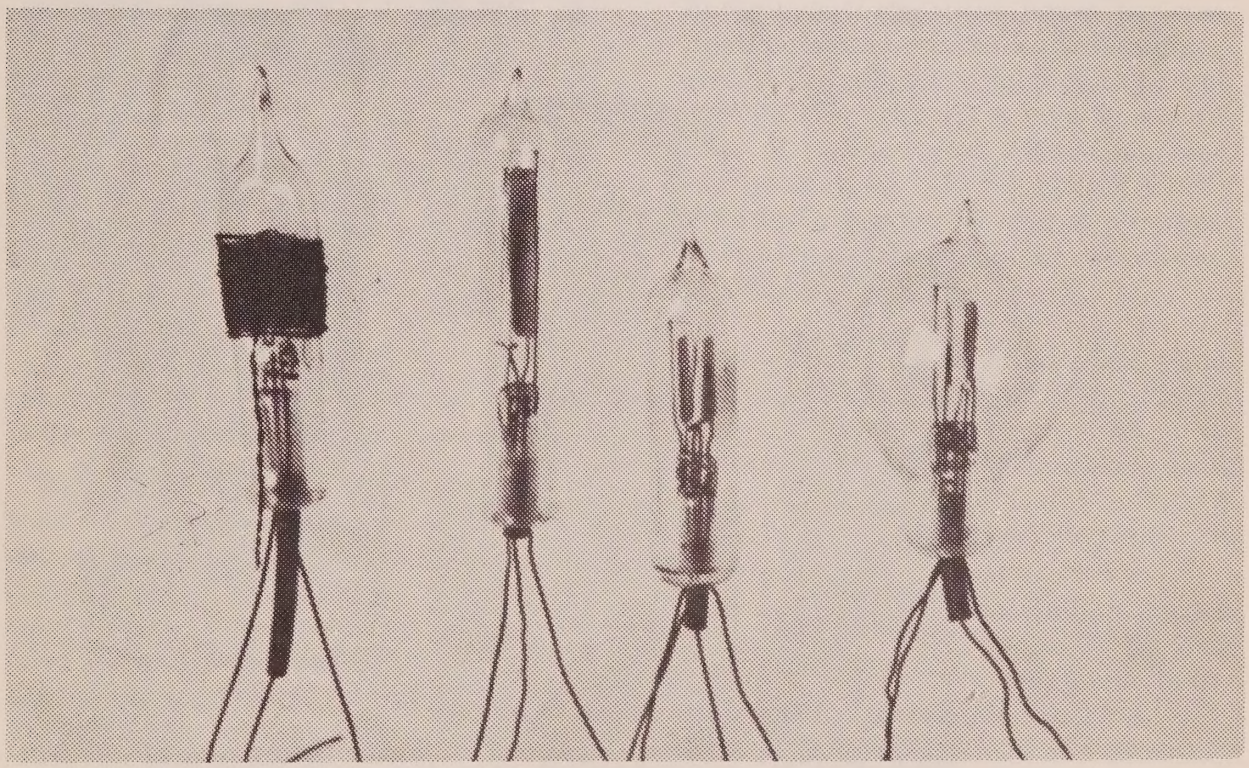


WESTINGHOUSE EXPERIMENTAL TUBES

Left to Right: 1. Diode with external control using many turns of fine wire. (early 1920) 2. Diode probably used to test oxide filament for future WD-11. (early 1921) Samples 3 and 4 have two internal plates and indicate a design to avoid the grid patent controlled by AT&T. They were made in early 1920.

THE VACUUM TUBE

Editor: Bro. Patrick Dowd, F.S.C., W2GK

SOME FORGOTTEN METAL TUBES

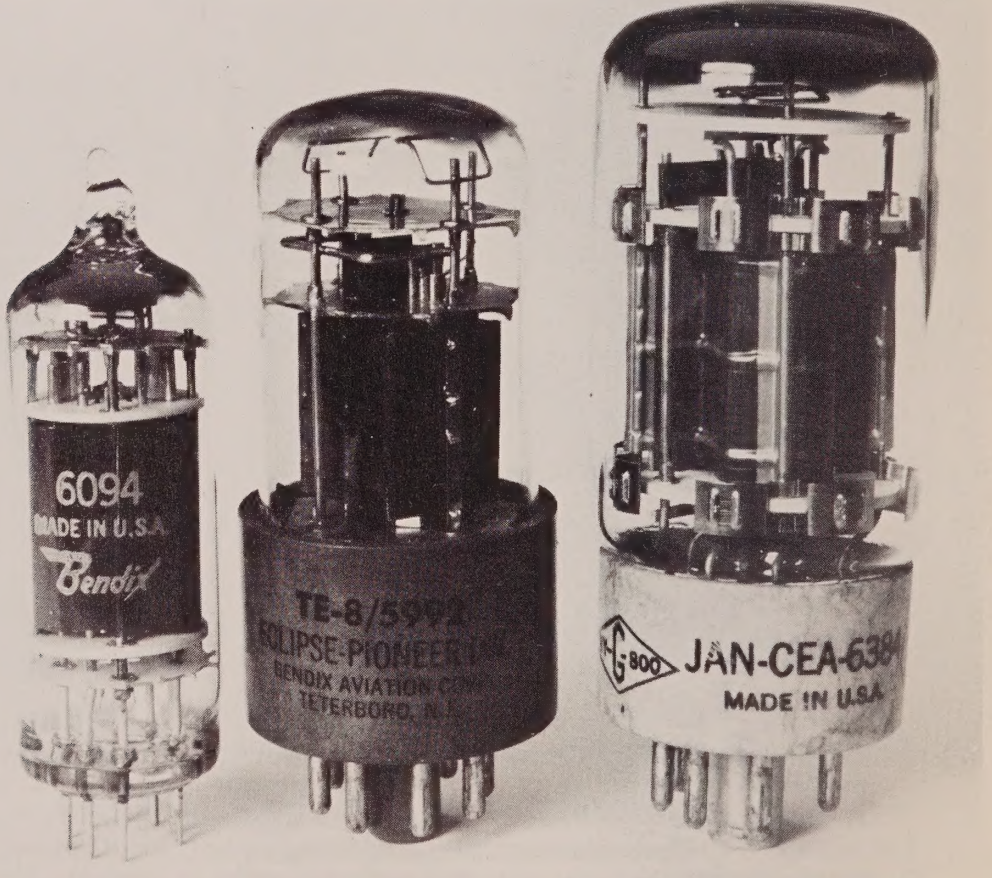
by Leo Gibbs, W8BHT (formerly with the Air Materiel Command, Wright Field, Dayton, Ohio) and Alan Douglas (Box 225, Pocasset, Massachusetts 02559)

In the late 1940s, there was an increasing need for tubes to operate at high ambient temperatures, especially in aircraft where space was tight and ventilation poor at high altitudes. Metal tubes had been used extensively during the war. Since there was no obvious limitation on the operating temperature of a metal envelope, as there was with glass (its softening point), developing miniature metal tubes seemed to be a logical step.

In 1949 an Air Force contract was awarded to Raytheon to develop metal tubes in a T-3 envelope capable of operating above 250° C. Three types were made: a half-wave rectifier, a triode equivalent to half of a 6AS7G, and a beam tetrode like a 6L6. However, the development was unsuccessful.

Bendix, in its tube plant at Red Bank, New Jersey, had made special tubes for its own use for some time. Bendix bid on and won an Air Force R&D contract to continue work on these three metal tubes. To improve the power dissipation, the diameter was increased from T-3 to T-6½.

Two particular problems were encountered with these tubes. The usual barium getter would not work at the high temperatures, so a mischmetal type (cerium alloy, used in lighter flints) was used. Because of fire regulations this material could not be handled in the Red Bank factory, so the unsealed tubes were shipped to the late Tom Briggs in Pennsylvania who inserted the getters and sent the tubes back to Bendix for completion.



Bendix (Eclipse) reliable tubes 6AQ5, 6V6, 6AR6 (6094, 5992, 6384).

(Continued from previous page.)

The cupro-nickel envelop was also found not to be vacuum-tight at 500°C, but the development was otherwise considered successful. However, no suitable socket could be made – the contacts lost their spring tension at the high temperatures.

At this time ceramic-envelope tubes, under development by Eimac, Sylvania, and GE, were considered to have more potential. And glass tubes were being improved: with ceramic spacers rather than mica, and hard-glass envelopes, these could eventually be run at 300°C. Bendix was in fact awarded contracts to improve the reliability of such types as 6V6, 6AQ5, and 6AR6 (resulting in the 5992, 6094, and 6384).

Raytheon samples cast in an acrylic block, and two Bendix TE33s, shown with an ordinary 6L6 for comparison.

By the late 1950s, metal receiving tubes were forgotten, aside from RCA's Nuvistor, and even the few ceramic types that had gone into production (by GE) were finding it hard to compete with silicon transistors. These didn't need to run at such high temperatures, since they lacked the heaters that created most of the problem in the first place.

Further information on these tubes is most welcome, also for the GE and Eimac planar ceramic receiving tubes, and samples or photos of Sylvania developments.

DR. LEE DE FOREST MIS-PORTRAYED

News reports about presidential candidates seem to seize upon the controversial, perhaps because something negative or unfavorable draws more attention.

This tendency has often held true in articles about Lee DeForest. Disparaging adjectives include "*incompetent, ignorant, ill-mannered, and crooked*".

I take exception to this created impression and base my opinion on the remarks of two men who knew DeForest and had no reason to slant their testimonies either way. First, from the well-known radio pioneer, inventor and respected engineer, Lloyd Espenschied:

My long years of friendship with De Forest were pleasant ones; he was good company, romantic, challenging, and of an egotism so naive as to be enjoyable. He seemed to be a lone-wolf kind of Robin Hood; likable, shrewd and knavish, intent on speculative patents and stock certificates as a means of robbing the rich in the wondrous woods of wireless.

Another respected radio historian, Gerald F. J. Tyne, often spoke of his friendship with DeForest, who was a frequent visitor in the Tyne household. On occasion, Gerry would question him about one of his early inventions, and in responding, would look his guest in the eye and say, "*Doc, that can't be true!*"

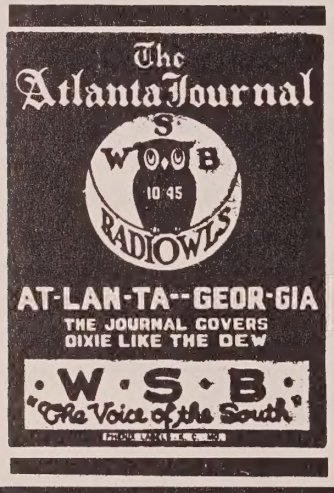
With a twinkle in his eye, DeForest would smile back, say nothing, but laugh. Gerry enjoyed their relationship and found him a pleasant and stimulating companion.

After reading many books and articles on De Forest I've come to the conclusion he really never hurt anyone other than himself. I wish I had known him.

-- *Bruce Kelley*

DX BROADCAST MONITORING and EKKO STAMPS

In the early 1920s radio broadcasting came into being and virtually everybody who owned a receiver became a "DX" enthusiast. Long distance reception developed into a real hobby with many participants writing to the stations they heard reporting time and the name of the program and asking for a confirmation of reception.



Enter now "*EKKO*" stamps – the product of a Chicago entrepreneur with a masterful public relations and sales campaign. EKKO published an album for collectors with spaces for "*verified reception stamps*" from all recognized stations in the US and Canada. EKKO supplied subscribing broadcasting stations with a supply of stamps carrying the station's call letters. Listeners who wrote stations for verification of listenership and enclosed a dime would receive one of the station's stamps and a confirmation letter or card. Some stations refused to subscribe to the EKKO program and printed their own stamps to be sent to listeners.

The EKKO company in 1927 sent out a circular saying in effect "*there are over 800 broadcasting stations on the air today, and this is a condition which can not continue. Congress will act in the very near future to regulate stations. Many now on the air will cease to exist .... you should obtain all the*

EKKO stamps you can now for your album since they will no longer be obtainable if a station shuts down, and the stamps will become a rarity". The stamps were printed in various colors displaying two towers with an eagle between them for US stations and for Canadian stations a beaver gnawing away at a tree. Superimposed were the station call letters.

By the late 1930s many things changed, and the hobby ran its course. But there are specialized collectors today who prize these stamps and albums. They are sometimes still to be found in dusty attics and in antique shows and flea markets. Why the letters "EKKO"? Lost in history. Maybe they are the initials of the entrepreneur, or maybe he didn't know how to spell ECHO.

ANNUAL CONFERENCE

The Antique Wireless Association

"An amateur organization devoted to the history of wireless"

AFFILIATE

SHERATON INN
CANANDAIGUA, N.Y.

On Rt. 20 directly on beautiful Canandaigua Lake,
770 South Main Street, Canandaigua, N.Y. 14424

September 1988

Wed.	Thurs.	Fri.	Sat.	Sun.
21	22	23	24	25

Registration with meals MUST be made through Bruce Roloson, P.O. Box 637, Penn Yan, New York 14527 BEFORE September 11. Unlimited registration at door. (Note: Absolutely no admittance to any activity without a Registration BADGE!)

This is our 27th Annual Conference. It is an occasion when radio historians convene, exchange equipment and learn more about the development of radio. Canandaigua is located in upstate New York's beautiful Finger Lakes region. It is easily reached by car or by plane to the nearby Rochester airport. If you plan to fly, write for the best route from the airport to Canandaigua. Register early!

WEDNESDAY 12 noon **REGISTRATION** in Lobby for Conference and Flea Market.

12 NOON FLEA MARKET (Wednesday noon through Sunday)

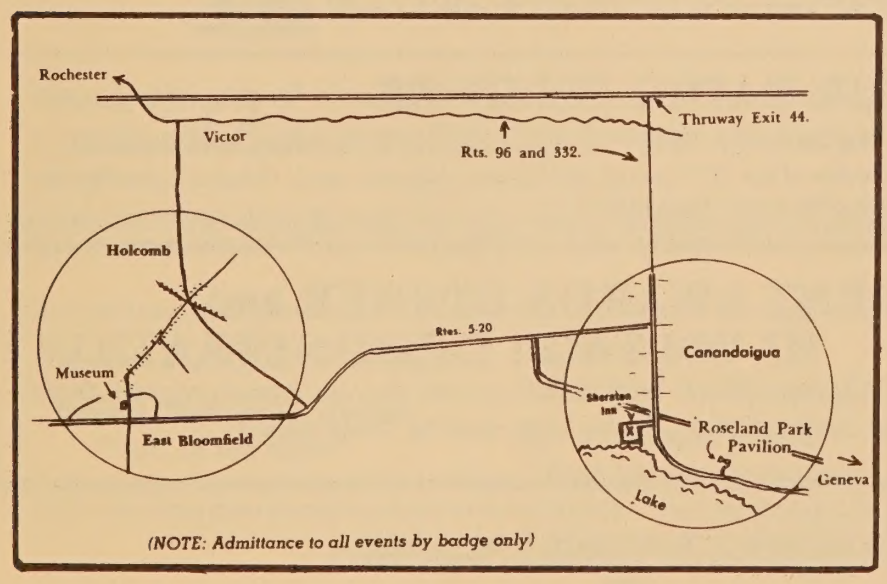
It has been requested that AWA confine its flea market activity to the designated area and the hours noted. These rules will be rigidly enforced on all Sheraton property. Please co-operate. Members are strongly advised to register in ADVANCE. This will allow the committee to prepare your flea market card in advance and also save you money.

Registration starts at 12 noon in the Sheraton lobby. AWA not responsible for sales or tax.

NO OVERNIGHT PARKING IN FLEA MARKET AREA.

7:00 - 9:00 PM – REGISTRATION in Lobby for Conference and Flea Market.

7:00 - 10:00 PM – AWA MUSEUM OPEN (*East Bloomfield, 6 miles East, Route 5*)



(NOTE: Admittance to all events by badge only)

OPEN HOUSE

A.W.A. ELECTRONIC COMMUNICATION MUSEUM
East Bloomfield, N.Y.

VISITING HOURS

Sunday, Sept.18
2 - 5 PM

Wednesday, Sept.21
7 - 10 PM

Sunday, Sept. 25
9:30 AM - 11:30 AM
2 - 5 PM

The Museum will NOT be open Thursday, Friday or Saturday.

THURSDAY

8:30 AM – REGISTRATION in Sheraton Lobby for Conference and Flea Market

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3:00 PM

HIGH POWER LONGWAVE STATIONS 1912 - 1956

A nostalgic journey into the past with original pictures and recordings.

4:00 PM –

TECHNICAL DEVELOPMENT AT EARLY STATION KDKA

Dick Brewster, Pittsburgh, Pennsylvania

This is a first-time report on the early transmitter at pioneer KDKA.

7:00 PM – **A TRIP IN NOSTALGIA:** Gibson Girl to Old Broadway.

8:30 - 10:30 PM – Check-in of items for Old Equipment Contest *(Tiffany Room)*

7:00 - 10:00 PM – Registration and Main Auction check-in (*Early preview*)

FRIDAY

8:30 AM – REGISTRATION in Lobby for Conference and Flea Market

8:00 - 9:00 AM Check in **OLD EQUIPMENT CONTEST** (*Tiffany Room*)

9:15 AM – LADIES' TRIP (*with luncheon*)

9:00 AM **SPECIAL ESTATE AUCTION** of early equipment and tubes.

10:00 - 11:00 AM – **VACUUM TUBE AUCTION**

Bruce Roloson, Auctioneer **(AWA not responsible for merchandise or tax.)**

11:00 - 12 Noon – **GENERAL AUCTION** of equipment.

1:00 - 4:00 PM – **GENERAL AUCTION** of equipment.

(*Note: 10% of all auction sales donated to AWA.*)

3:00 PM **AMATEUR RADIO SEMINAR** *(Ontario Room)*

Ken Gardner, W2BGN (New Hartford, New York) **Bud Hall, K2LP (Eastham, Massachusetts)**

The program will consist of a review of the OT Contest, scoring and equipment used. General discussion on Net operation and other subjects of interest to the amateur.

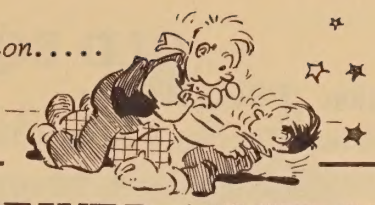
7:00 PM – **EQUIPMENT AWARDS DINNER and HI-VOLTAGE DEMONSTRATION**

with Jim Hardesty and John Wiesner. (Note: If conditions permit after the dinner program, there will be a spectacular outside demonstration of two large dueling Tesla coils.)

9:30 - 10:30 PM – Auction payment at Registration Desk in lobby.

SATURDAY

Plenty of action.....



8:00 AM **Check-in for communication equipment.**

9:00 AM COMMUNICATION RECEIVER AUCTION

The equipment in this auction is restricted to communication equipment made after 1930, such as National, Hallicrafter, Hammarlund, etc., (receivers and transmitters).

10:30 AM THE HISTORY AND EVOLUTION OF THE MICROPHONE

Bob Paquette, Milwaukee, Wisconsin

A thorough discussion (illustrated) by the nation's leading microphone authority.

11:45 - 1:15 PM – Special Luncheon in dining room overlooking lake.

12:30 PM –- LADIES' LUNCHEON and PROGRAM *(Tiffany Room)*

1:30 PM

COLLECTING AND RADIO DEVELOPMENT IN ITALY

Bob Lozier, Monroe, North Carolina

An opportunity to see unusual and unique designed receivers.

2:30 PM

MC MURDO SILVER, THE SILVER-MARSHALL COMPANY AND ITS PRODUCTS

Larry Flegle, KC4AXQ

A first-time paper on a well-known manufacturing company.

7:00 PM –

GRAND BANQUET

This is the grand finale! An evening of fellowship and fun. Presentation of Awards with Elliot Sivowitch (Smithsonian Institution). Special program for everyone.

Special PLAQUE AWARDS:

Eunice Thompson Award:
"Best of the Show"

Exhibit Award:
"For Best Presentation"

Elle Craftsman Award:
"Best homemade receiver"

Transmitter Award:
"Best homemade or restored amateur transmitter or receiver"

Conference Chairman: Lauren Peckham

OLD EQUIPMENT CONTEST

Location: Tiffany Room **Ralph Williams, N3VT, Chairman**

Check-in: Thursday 8:30 to 10:00 p.m. (*Remove equipment by Saturday noon.*)

Restrictions: Participants may enter a maximum of 3 categories. (*Guard on duty at all times.*)

1. **PASSIVE RECEIVERS.** Any detecting device, not including vacuum tubes or solid state amplifying devices whose purpose is to convert radio energy into intelligence is sought.

2. **ONE AND TWO TUBE RECEIVERS.** Any receiver which uses one or two tubes for any of its functions. A tube or valve that includes more than one electron stream in a single envelope will be counted as one tube.

3. **THREE TUBE RECEIVERS.** The detector-two-stage is the most often found radio in this category but reflexes and special circuit sets are sought.

4. **FOUR AND FIVE TUBE RECEIVERS.** Many radios from all periods can fit here, not just three-dialers. Electric radios that show some special feature will be welcomed.

5. **SIX OR MORE TUBE RECEIVERS.** Superhets are the usual entries in this class but many other sets qualify, especially the electric radios of the thirties. Most communication receivers can be entered.

6. **SPARK TRANSMITTERS AND ARTIFACTS.** Do not hesitate to enter a major piece of spark equipment if you think it is rare or historically significant.

7. **VACUUM TUBE TRANSMITTERS.** Some of the sets for this class are old, some not so old, most home-built. While the predominant entries have been amateur-operated, commercial equipment is welcome.

8. **MICROPHONES.** Enter your prize microphone and we'll see if we can give Bob Paquette something to help judge. Don't hesitate if you can enter a novelty microphone or a telephone transmitter.

9. **KIT SUPERHETERODYNES.** When only RCA sold supers, many enterprising business sold hits for home assembly. For this category the radio and the data (instructions etc.) are the key items for each entry.

10. **NOVELTY A.C. RADIOS.** Entries here can range from Mother's Oats crystal sets to Teddy-bear transistors.

11. **BEST RESTORATION.** While there is no requirement for the kind or size of set to be entered in this category, the description of the work done will be considered an important part of the entry.

LADIES' PROGRAM

Another fun excursion is planned Friday (9 AM-5 PM) See flyer for details. LADIES' SATURDAY LUNCHEON and PROGRAM will be held in the new small dining room directly across from the main dining room. There will be an entertaining program plus gift drawings. Sign up early!

MOTELS: There are numerous motels in the area as well as a variety of fine eating places. For members who like fast-food establishments there are: Ponderosa, McDonalds, Perkins, Burger King, Wendy's, Kentucky Fried Chicken, and others within a short distance of the Sheraton.

Lakeshore Motor Lodge, 100 Lakeshore Drive, Canandaigua, NY 14424 (716) 394-4640
Miami Motor Inn, Rts. 5 & 20, Canandaigua, NY 14424 (716) 394-6700
Georgian Motel, Rte. 332, Canandaigua, NY 14424 (716) 394-2321
Motels in outlying areas: *(Telephone for vacancy and deposit info.)*
Sunrise Hill Inn (Thruway Exit 44) Rts. 96 & 332, Box 25237, Canandaigua, NY 14425 (716) 924-2131
Abbott's Motel (near Thruway Exit 43) Rte. 96, Manchester, NY 14504 (716) 289-3811
Chanticleer Motor Lodge, Rte. 5 & 20, Geneva, NY 14456 (315) 789-7600
Valley Motel, Rte. 5 & 20, Holcomb, NY 14469 (716) 657-6663

Special Buffet Breakfast in Sheraton Dining Room, Sunday.

RESTORING OLD EQUIPMENT

FINISH ON BAKELITE PARTS by Don Chester, K4KYV

Never use water based solvents like "409" and "Fantastik" to clean old bakelite parts. I recently cleaned some bakelite dials with that stuff. I noticed that the liquid dripped off a brown color. The first thing I thought was "cigarette smoke residue". But I noticed that after the dials were dried, they no longer had as much shine as before, although they were cleaner. So I experimented by cleaning another bakelite part (of no value) with the same cleaner, and sure enough, it once again washed off an amber colored residue. When the piece was dried, it likewise lost much of its shine.

I had always assumed that bakelite was simply polished to a shiny surface, but evidentially some kind of lacquer finish is applied after the part is removed from the mould, and water-based cleaners dissolve this finish, leaving bare bakelite which does not have a high degree of lustre. A much safer method of cleaning is to simply use mild soap and water, and a soft cleaning cloth. I have also noticed that coarse cotton fabric leaves microscopic, but visible scratches if you rub too hard. Soft flannel seems to work well, if the piece is rubbed *lightly*.

I would be interested if any *OTB* readers might know what kind of polish or lacquer is used on bakelite parts, and if there is any possibility of purchasing this substance and re-applying it to bakelite parts which have been improperly cleaned or otherwise have lost their original finish.

If there is indeed a lacquer finish or bakelite, it must be extremely durable. I have seen bakelite knobs which have been heavily used for decades, which still retained their shiny finish. Still more evidence of such a finish lies in the fact that I have never been able to polish bakelite parts which have been damaged by abrasion (scratches, etc.) by any amount of polishing with cloth, paper or the finest grade emery cloth. Some collectors have mentioned using ordinary car wax, but I am skeptical of using any foreign substance until I have heard someone knowledgeable about bakelite plastic.

DIRTY VARIABLE CONDENSERS

Old broadcast receivers frequently collect dust or dirt between the variable tuning condenser plates. This residue can be removed with a good jet of air. Another solution is the use of a pipe cleaner when spacing is sufficient.

A real problem is when metallic fuzz finds its way between the plates and makes a short at certain points on the dial. Here's a solution I have tried with success.

It can be removed by burning it off by the application of a high voltage across the plates. Unsolder the lead to the stator and apply a high voltage directly across the condenser, turning the rotor knob until all shorts are burnt out.

This high voltage may be obtained from the high voltage winding of a spare transformer. To protect the transformer, a 100-watt lamp should be placed in series with the primary. Use caution where the high voltage and ground connection are in the temporary circuit.

-- **Andy Polimeni**

RIDER MANUALS

Confused? – can't find the schematic you're looking for? John Stokes, Editor of NZVRS *Bulletin* says don't give up. He tells one first to be sure the set is listed in the Complete Index, not the Volume Index. Schematics were sometimes not in the current year volume since they may not have been available when it was printed – so look in later volumes.

In addition, a schematic may be frequently found under a different brand name. As an example, Wells-Gardner was a large supplier for different outlets including Montgomery Ward – so the schematic could be listed under either name.

HISTORICAL ARTIFACTS

OLD TIME ADS are FREE to members interested in collecting and restoring early radio equipment for personal use.

RULES FOR ADS:

1. Only ONE per issue per member. Send SASE for acknowledgement.
2. Material must be over 25 years old and related to electronic communication.
3. Give full name, address and zip.
4. AWA will not repeat ads. Repeats require another notice.
5. The Association is not responsible for ANY transaction.
6. AWA retains the right to reduce size of ad if over SEVEN (7) lines.
7. AWA does not accept commercial advertising.
8. Deadline for ads:

FEBRUARY issue--DECEMBER 10
MAY issue ------MARCH 10
AUGUST issue----JUNE 10
NOVEMBER issue--SEPTEMBER 10

Ads received after the above dates will be discarded. Mail ALL ads to:

RICHARD RANSLEY
17 SHERIDAN ST.,AUBURN,NY 13021

(Do NOT send ads to Headquarters.)

WANTED

--Crosley radios and Crosley advertising from 1920 to 1952 in any condition. Michael Morrell, 7151 Davis Rd., West Falls, NY 14170

--Grebe CR-9 cabinet. Also audio transformers for same. Arthur Harrison, 501 Arbor Drive, Columbia, MO 65201 Tel. (314) 474-8729

--early quack medical violet ray devices such as Renulife, Master, Parco, etc. Also any ring mount microphones. Richard Cane, 8391 NW 21st St., Sunrise, FL 33322 Tel. (305) 741-6838

--speaker assembly for Philco 50A Cathedral including 2660 output xfmr,Freed-Eisemann Model 376 gold top audio xfmr (open ok),info on Erla Rely O Dyne recvr,RCA Victor gold coloured plastic logo used on Model C-503. Paul Rosen, 30 Cherrystone Dr.,Willowdale, Ontario, Canada M2H 1SI (416) 493-6962 evenings

WANTED

--crystal sets and germanium diode receivers desired by Austrian collector. Erwin Macho,Ambrosweg 17/A8,1230 Vienna Austria

--AK 30 in writing desk, AK40 console with doors, AK40 writing desk.Radiola 18 spool-leg cabinet. Silver Marshall console, Zenith 6J230, Fairbanks Morse Tombstone, Philco battery console. Send SASE R. Olmsted, 608 W. Thompson Lane, Murfreesboro,TN 37129

--Midwest dial, translucent celluloid 5" dia 6 bands E,A,L,M,H,U. Will pay $20 up or buy chassis for nice one. Will pay your fair price and more for pics or info on heavy long 24 tube Midwest Royale console. Gene Claus, 2305 W. Rice, Sioux Falls, SD 57104

--plug-in oscillator and pwr. amp. coils for Hallicrafters HT-6, especially need 80,40 or 20 meter coils.Also xtal adapter unit. Craig Hinton, 2668 N. Riviera Drive, White Bear Lake, MN 55110

--Hammarlund manuals,parts and tubes for SP-600, HQ-105TR,Collins R-390A manuals, Hallicrafters SX25 and S40A parts. SASE for list. Sloan F. Million, 102 Ithaca Drive, Colorado Springs, CO 80911 Tel (719) 392-5605

--British collector of National wants 'National Dancing Men' toys,MB-29, SW-4,SW-2,MB-29,LC-3,MB-30,SW-3.SW-5, SW-45.SW-54,SW-34.MB-32,AGS,AGU,SW-58C, NC-5,SRR,TRM,TRW,HFC,FB7,FBXA,HRO 7, NC-100X,1-10,1-10A,HRO060,HRO-500, HRO-600 plus any equip.Will buy or swop for British vintage magazines,domestic radios and military equip. Paul Varkalis, 116 Waverley Rd., St. Albans, Herts AL3 5th. England

--oscilloscopes of the 30's with 3" or smaller CRT. Also want 1-3" CRT's and manuals for early scopes. Have many radios, tv's,tubes, parts and literature to swap or will buy. John Kendall, P.O. Box 436, Fallston,MD 21047

--Balkeit (a/k/a Emerson) Model F radio, Audiola Model 23S12 (sold by Allied Radio, cat. no. E6832 as 12-tube Class B Super). Need glass dial, information for Philips Model 845X-14-4 radio, c. 1936. Jonathan Bouve, 24 South St., Hingham, MA 02043

WANTED

--schematic or manual for Allied/Knight "Star Roamer" multi-band receiver model 22 3102 801001 713.Don Nordenholt, 1509 Cliffbrook Dr., Plano, TX 75075

--National parts & components for SW-3, FB-7, AGS and HRO. Pre-war.No literature.All types of basket-case receivers for parts.Coil sets A,B,C and D for pre-war HRO. Stan Hojnacki, 213 White Horse Pike, Oaklyn, NJ 08107

--Tektronix 321 scope,Farnsworth FV200 TV, tuner or tuner motor for 1956 Zenith Flash-Matic TV. Jerry Talbott, 1440 SW 239th, Hillsboro,OR 97123 (503) 649-6717

--supplement test data sheet to test old tubes for Stark Electronic Inst. tube tester Model #9-55. Copy OK. James Moran, 460-31st Ave. Apt. #10, Lascalle, Quebec Canada H8P 2X1

--RCA TRK-12 television receiver, any condition. Ken Monnier, 2116 N. Broadway Ave., Sidney, OH 45365 Call collect (513) 492-4785

--Scott-McMurdo.Collector would like to purchase sets from the 1930s.Also Arvin, Rhythm and Phantom series sets. Mike Greene, 19113 Alpenglow Lane, Brookeville, MD 20833 (301) 774-3203

--military radios circa WWII.Dynamotor DY43 for SCR 506, ART-13 power connectors,manuals for BC 223.Individual sets or whole collections. Charles DiCecca, 501 Mystic Valley Parkway,Medford, MA 02155

--United Wireless Tuner.Early wireless book collection. Richard Groshong, 6604 Kent Dr. NE, Cedar Rapids, IA 52402 Tel. (319) 377-3144

--National receivers,products and literature, McMurdo-Silver receivers and transmitters,National MCS speaker, H & J coils for HRO-50T, low noise preamp/converter using 416B tube. Steve Barnes, K6PFW, 848 N. Silverwood, Upland, CA 91786

--junker chassis for Fada Model 16,17 or 32. E.M. Fowler, 124 Holly Lane, Morehead City, NC 28557

--Hallicrafters SX-115,General Electric Model E-50,Juvenile fiction books on radio and wireless. Alan Reed, 2875 Geneva Hwy, Manitou Beach, MI 49253

--grandfather clock radios,character and novelty radios (transistor or tube). Clifford Watts, 51 Glendale Rd., Brantford, Ontario, Canada N3T 1P5

--microphones pre '60s. Ribbons, carbons etc. Also station I.D.'s. Would like to communicate with others regarding mics, disc-cutting, transcription programmes etc. John Henderson, 85 Parker St., Bassendean. 6054, Western Australia

--operating instructions and tube data sheets for Jackson Dynamic Tube Tester Model #636. Copy O.K. Frank Hoffert, 19605 Chardon Road,Cleveland,OH 44117

--info on Fada 195A. Need help on an internal wiring problem. Bob Lindsay, 901 Ferngrove Drive, Cupertino,CA 95014

--Morse tapes (not CW) for the INSTRUCTOGRAPH,also telegraph keys,sounders and relays made by Bunnell,especially miniature items.CIA/OSS/KGB and other 'spy' radio/keys. L.E. Stephenson, 1006 Westwood Dr., San Jose, CA (408)292-6463

--Johnson Model 122 160-10 M VFO with manual, either working or repairable. WRL Globe Chief Model 90 (not A or B) in good condition. Herb Ley, N3CDR, P.O. Box 2047, Rockville, MD 20852

--cabinet for a Radiola X (16"x9") Emil Patrick, W3MCE, 2111 Ridge Rd. Ext. Ambridge, PA 15003

--Quality individual photographs of old wireless and radio components to about 1950. Will buy or trade. H.B. Davis, 1209 N. Market St., Dayton,TN 37321

--new or used Hitachi Vidicon 8758 or equivalent or a possible source of same. Need a 25K voltage divider for a Pilot 'B' eliminator. Tad Drogoski , 507 Coal Valley Rd.,Clairton, PA 15025

--spark equipment for club talks and any early spark info. Edward White, WA3BZT, 2404 Hedgerow Dr., Wilmington, DE 19810 Tel. (302) 475-3355

--detector and loop antenna for DeForest D-10;Zenith Transoceanic Model 7000 and lids with tags for Crosley box sets. William Wade, Jr., 657 14th Ave., Prospect Park, PA 19076

--Kennedy X or XI,Radiola IX or VIIB, Marconiphone I,IV,VII,XI. Hard rubber panel 10x11x¼ or larger. Gordon Wilson, 11108-50 Avenue, Edmonton, Alberta, Canada T6H OH9

--for Crosley 52: dial pointer,phone condenser, two battery binding posts. For DeForest D17: loop antenna, horn driver. For AK20 big box: one battery binding post.Info on R.B.Radio,Inc Model 11. Dave McClellan, 1086 Trailridge Lane, Atlanta, GA 30338

WANTED

--Old Timer's Bulletins dated 1973 and earlier. Frank White, P.O. Box 2012, Olathe, KS 66061

--private collector looking for unusual rare bugs (speed keys) to add to my large collection. Hulit especially welcome. Gil Schlehman, 335 Indianapolis, Downers Grove, IL 60515

--tube charts and instruction book for Precision 700 tube tester, copies or original. Also need Riders manual Vol I. Ken Gfeller, 211 No. Garfield, Junction City, KS 66441 Tel. (913) 238-3447

--Morris Coil Winder,Burroughs adding machine with beveled glass windows and cast iron stand. Henry Schwartzman, 133 W. Fourth St., Corning, NY 14830

--Radio Retailing magazines 1930,33, 34 & 37; Radio/Doings mags. 1929-35; Radio mag. 1931-33. Have Monach xtal set made by Rippner Bros., also a Howe xtal set. Floyd A. Paul, 1545 Raymond Ave., Glendale, CA 91201

--crystal set mfg. in Portland, OR, such as "Magic". Top dollar paid. James Mason, 90 N.W. 150th Ave., Beaverton, OR 97006

--electric toasters before 1935, nickel plated,porcelain, anything unusual in good condition. I will be at Canandaigua selling a selection of radio items and will have a display of toasters. J. Barker, P.O. Box 592, Hawley, PA 18428

--schematic and any other info available for Bremer-Tully Counterphase Six (not Power Six). H.W. Burt, 1000 Plaza del Sol, Roswell, NM 88201-2614 Tel. (505) 623-2072

--WWII German communications radio equip. and any other WWII German electronic equip., optics and movie cameras. Steve Puntillo, 1911 Rowley, Madison, WI 53705 Tel. (608) 233-1569 after 12 noon Central time

--glass antenna insulators, especially unusual colors and shapes.Also need embossed AGK No.5. Jim Singleton, 77 Cochrane St., Melrose, MA 02176

--1933 Philco Model 16 cabinet in restorable condition.Also 1936 Midwest 7 or 11 tube console or table model radio, not AC/DC. Have Kenwood R-1000, absolutely mint. Don Miller, W2MQB, 517 Accabonac Hwy., East Hampton, NY 11937

--WE 387A double button carbon microphone and/or T-670 mounting for same to restore my 1927 phone transmitter.Also any portion or parts of DeForest Type O Radiophone. D. Reginald Tibbetts,W6ITH, 2151 Camino Pablo, Moraga, CA 94556 Tel. (415) 376-5082

--plastic dial cover and manual or copy for Echophone Commercial. Also main tuning knob for Hallicrafters S-38. Dave Noon, VE3IAE, 19 Honeysuckle Cr., London, Ontario, Canada N5Y 4P3

--German,Japanese,Italian WWII military radios and items. Pre-1950 US military mobile types.Magazines,manuals,training materials, literature on same; aviation mags "Bendix Engineer", USN "Electron". Hugh Miller KA7LXY, 6400 Maltby, Woodinville, WA 98072-8375

DISPOSE/TRADE

--National HRO-M rack model receiver, all coils (9), covers 100 kHz to 30 MHz. Refurbished and working with extra tubes. $100;Zenith all transistor Model Royal 1000, like new w/manual & shortwave book in cover $100. Both FOB Wheeling, WV Bob Hess, P.O. Box 6761, Wheeling, WV 26003 (304)242-7735

--will trade SW-5 for AGS.Will sell HRO, RME69. Want SBE-33, Swan 240, NCX-3,Hallicrafters SR 150 and 160. Joel Levine, 38 Bamboo Lane, Hicksville, NY 11801 Tel. (516) 933-7237

--Radiart Vibrator Analyzer Type P-6, exc. cond. $15.;Sparton BC/SW radio Model 517 exc. cond. $75;Crosley Model 601 Bandbox TRF fair,no tubes $25, Zenith Model 6D2615 table radio, restored exc. cond $50.; Brandes table talker speaker, good $35.;early homemade crystal set,Quaker Oat box tuner, good cond. $25.; 6 Nat. Union 485 tubes in Sylvania boxes,like new, $30. All plus shipping. Nick Lamendola, 42 Caroline St., Rochester, NY 14620

--1928 Stromberg Carlson console. Fred London, 3716 South Country Club Way, Tempe, AZ 85282 Tel. (602) 345-1091

--50 years of literature-catalogs, flyers,books,manuals,Radio Masters, Dumont,Tektronix,H.P.,Hams, Radio-TV, and 20's-30's radios. 36 page list. 45¢ and LSASE. F. Yonker, 7 Old Farms Rd., Saddle River, NJ 07458

--many horns,radio chassis,metal radios, etc. Pat Cutini, 2114 Main Rd., Corfu, NY 14036 (716) 762-8270

DISPOSE/TRADE

--tubes,tubes,plenty of new metals, G's and GT's-most types,mini's-most types, antique-some,specials, 201A's globes, good used $3. ea.,Eimac 304TH 300 Watt triodes $15 ea.,new RCA 3B28's $3. ea., many more. SASE for needs. Vic Chartrand, Box 325, RR3, Manotick, Ont., Canada K0A 2N0

--vertical bug and right-angle bug from Australia, tubular audiotrons, '73' pocket bug, Sears spark key and oddball French detector/ looking for early telegraph keys or spark keys. Neal McEwen, 612 Stillmeadow Dr., Richardson, TX 75081 Tel. (214) 234-1653

--two crystal sets "Philmore Selective" kits in original boxes;one early transistor kit set;a Crosley Model JM-8GN including two transistors (2N138) and 1AJ5,1AH4 and 1V6;RCA model 44 microphone with table stand. All good. Best offer. Marcel Vallee, VE2AAM, 703 Boul. St-Germain Ouest, Rimouski, Quebec, Canada G5L 3S6

--summer 1967 issue of Radio Amateur Callbook. Excellent condition. $5. pp James Fred, R1, Cutler, IN 46920

--Radio! Radio! by Jonathan Hill. The most complete book on British radios; almost 1000 photographs. $19.95 plus $2.50 P&H. Have for trade cathedrals, tombstones,David Grimes Baby Grand, National AGS,coils,5 tube TRF's,Crosley IV,Ace V,X,52. Howard Stone, 2825 6th Ave., Fort Worth, TX 76110

--radio diagrams,Supreme Publications, compiled by M.N. Beitman, Five books, Vol 1-5 covering schematics and servicing info from 1926-42.With separate index and "How to Use Diagrams" books. Original issues,like new. $44. Sam J. Tomaselli, N2EHR, 30 Longcroft Rd., Rochester, NY 14609

--Cardwell three plate VC,heavy duty; variometers,woodframe and Bakelite; variable condensers including Murdock, Manhattan,DeForest;wave traps and more. SASE for list. Joe Horvath, 522 Third St., San Rafael, CA 94901

--Hammarlund SP400X (1946) complete with all metal tubes and separate pwr supply.S meter damaged.Needs work. With Sams and Riders schematics and data. $125 plus UPS. Lou Sabetto, 1717 Burgess Rd.,Cleveland,OH 44112 Tel. (216) 481-1036 evenings

--WWII English M.C.R.1 (Miniature Communications Receiver)"Biscuit Tin" receiver as supplied to French Resistance forces w/4 coils 100 kc to 15.5 mc. Belongs to French collector wishing to swap for an AK breadboard. Hammarlund SP200 Super Pro, exc. cond. $250. Frank Heathcote, 1235 N. 3rd St., Logansport, IN 46947 (219) 722-3612

--Delco 1102 (1935,exc., not wkg,hums) $55 (styling is slightly art deco.Has 2 speed tuning and 3 other controls) RCA Victor 101 (1933, VG, untested) $60. Send large 2 stamp SASE for current photo list. Ron Boucher, P.O. Box 541, Goffstown, NH 03045

--tie clasps & lapel pins, radio related. Philco, RCA and more. Send LSASE for illustrated list. Michael Sabodish, 11-A Matawan Ave., Cliffwood, NJ 07721

--300 vintage TV's from TRK 12's to Predictas for sale/trade. 3 dozen Australian bakelite radios and a transistor collection. See you in Canandaigua. Harry Poster, Box 1883, South Hackensack, NJ 07606 Tel. (201) 794-9606 days

--selling parts from the following chassis: RCA models 17,18,20,28,33. SASE for 1988 list of parts, tubes and more. F. Krantz, 100 Osage Ave., Somerdale, NJ 08083

--1936 National HRO, spkr, coils 1.5-30 mc.,book, H/B power supply.Also pair of 809 tubes. SASE for details. William Plimpton, RD6, Box 264, Wellsboro, PA 16901

--schematic and construction data of 1934 transmitter as featured on p. 18 of AWA OTB May 1988. 10 pages. $2 plus SASE. J. Newton, 1952 E.Fork Rd., Williams, OR 97544

--oldies,tubes @ $1 - types '24,'26, '27,'35,'37,'39,'56,57,58,75,80,'82, '81,6C4,6AG5; @ $2 - 955,957,9001,9002, 9003,6AK5,6F6,12A6,12AU7,12AX7; @ $5 - 6146,1625. Will take offers on 203,211, 803,807,811,813; 2N23 point contact transistors $8.,2N67 $5. SASE for complete list. H. Robinson, W3LW, 816 Lincoln Ave., Palmyra, NJ 08065

--large collection of ARRL Handbooks. Will be at AWA Conference in Canandaigua. Morris Rosenfeld, KA2JAJ, Box 26, 21A Callard Dr., Waterport,NY 14571

--'Radio Nurse' intercom by Zenith (1936).Also Silvertone 1938 Model 6110 by Sears Roebuck. Ross Young, 23 Beverley St., Toronto, Ontario, Canada M5T 1X8 (416) 598-2172

For sale large collection hard-to-find books. Write for list. Jim Kreuzer, 6270 Clinton St., Elma, NY 14059

--trade Bunnell sideswiper and 1906 Mecograph right angle conventional lever bug for other bugs. Sell prewar Hallicrafters HT-9 xmtr $105. Pickup only. Joel Kosoff, 2421 Shamrock Rd., Skaneateles, NY 13152

--early radio & TV schematics.Copies from Riders manuals $1./per page. Send SASE with list and postcard for answer on inquiries. Jason Kasconska, Garron Road, Box 832, Middletown Springs, VT 05757

--schematics-1920-60 for radio/tv/ham/ misc. $3.50 each. SASE for quotes on manuals and tube type electronic organs. Alton Bowman, 4172 East Ave., RD2, Canandaigua, NY 14424

--MYE Technical manual (1942); 6 vol. of Mallory Radio Service Encyclopedia (1937-42)with lots of parts and circuit info $75 for all ppd;Obsolete tube charts for Western Electric,Hickok tube tester KS-15560-L1,L2,KS-15559-L1, $6. ea. ppd; Triplett 2413,3212 instructions and obsolete charts, $6. ppd. Jim & Nadiene Farago, P.O.Box 6313, Minneapolis, MN 55406 (612) 722-0708

--1918 military WI-193A transmitter (like Conn. SCR65),SCR 59 remote control model,Crosley 654A trans/recvr, tubular audiotron, brass tipped WD-11's. SASE for list George Potter, 2069 Sienna Trail, Lewisville,TX 75067 Tel. (214) 393-0020

--1919 Wireless Specialty Apparatus Catalog.New-catalog Re-creations. DeForest "D",unit sets,Magnavox 1921 General catalog,RCA Radiolas & Radiotrons-Still have AK,Tuska & others. LSASE. A.W.Aseltine, 345 Glenwood St., Ann Arbor, MI 48103

--old radios for sale.Send large SASE for list. Donald Juleen, 6252 Ledge Rd., Sturgeon Bay, WI 54325

---NOTICE---

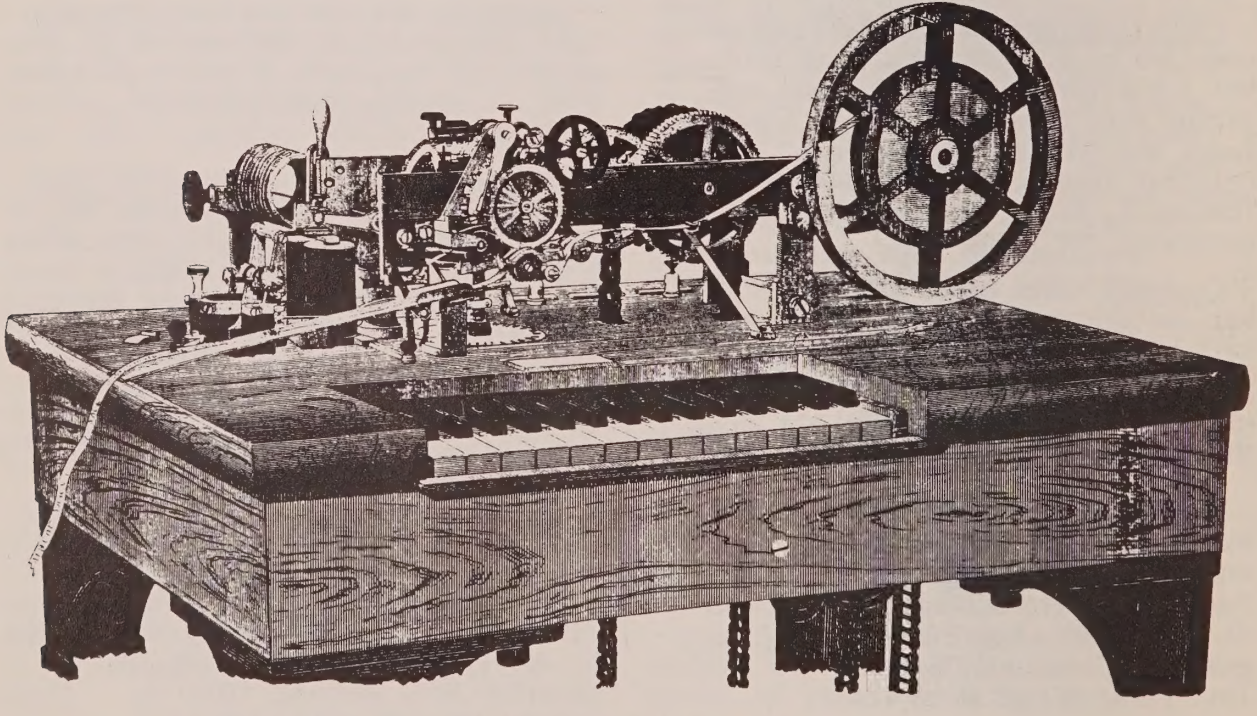
I receive ads naming a piece of equipment with NO other information. PLEASE note whether it is FOR SALE or WANTED!

On Review

Interested in early radio programs and stars? A new book just released titled: "Great Radio Personalitites" will bring back many pleasant years of nostalgia. It is a mix of exceptionally sharp pictures with abbreviated biographical resume of great radio stars of the past. A full review will be written in the next issue of the OTB. Available at $11.95 plus postage from:

VESTAL PRESS
320 N. Jensen Rd.,Vestal,NY 13850

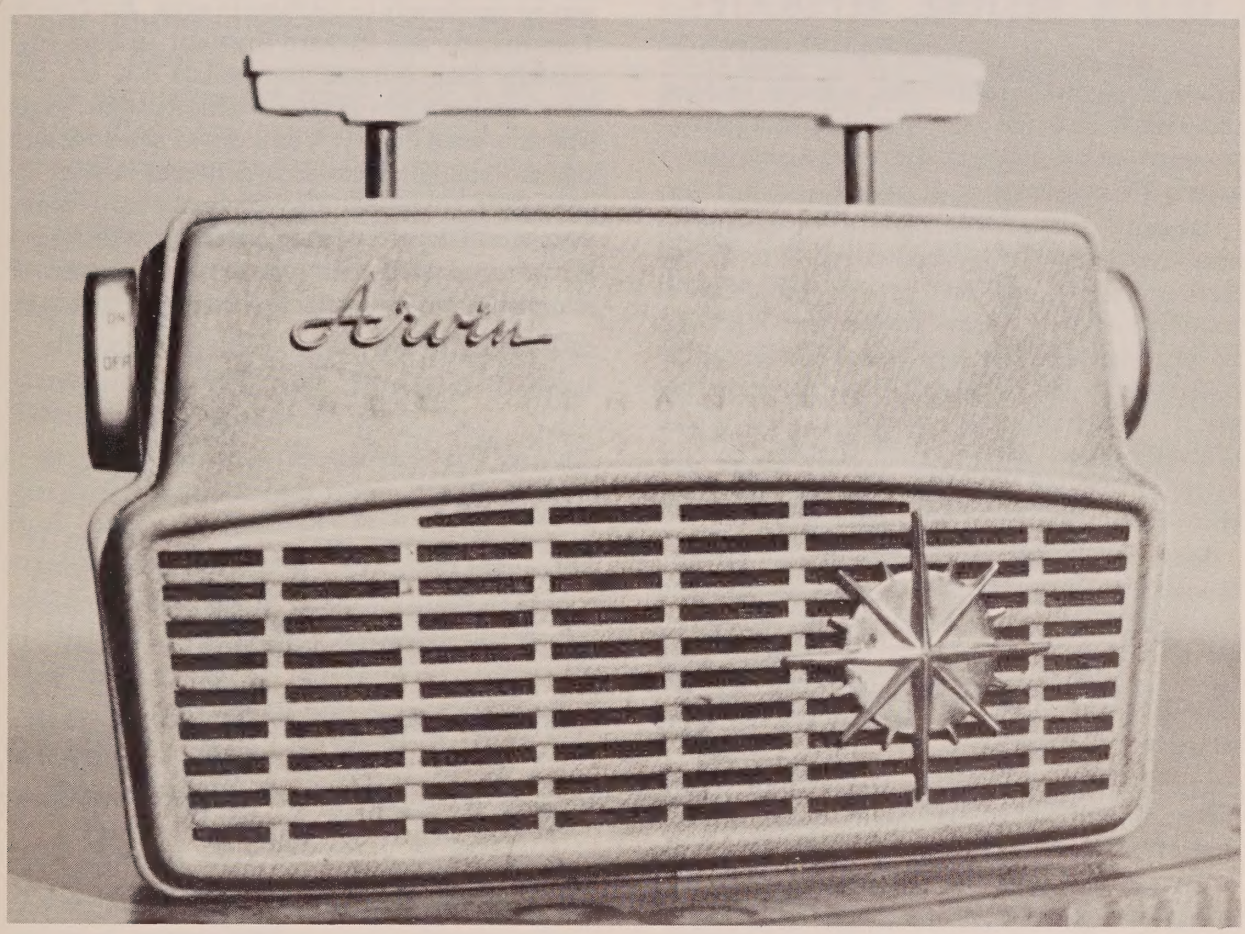
Another book to be reviewed in the November OTB will be an up-date of Ray Moore's "Communication Receivers".



EARLY TELEGRAPH STATION WITH KEYBOARD

THIS MONTH'S BROADCAST RECEIVER

by Norm Smith
7203 17th Avenue N.W.
Bradenton, Florida 34209



THE ARVIN MODEL 9574-P

ALL TRANSISTOR RADIO SET MADE IN COLUMBUS, INDIANA

The Arvin 9574-P is a six-transistor superheterodyne receiver which was designed and built in 1956 with an unusual cabinet design displaying the Arvin Company's background in stamped out metal panels. The Arvin Company was well known for products such as automobile mufflers, home electric heaters, and was one of the pioneers in transistor radio design.

This particular radio is enclosed in a stamped aluminum cabinet, made of a front panel and wrap-around frame which are held together by interlocking tabs. The back is held on with three tabs and two steel spring clips on the bottom. The whole cabinet is covered with what appears to be a leather grain vinyl to simulate a leather cabinet. There is also a gold star pattern badge on the right front. The control knobs are on either side of the top.

The set is representative of the transitionary period when the change was made from miniature tube portables to transistor sets and uses two #276 9 volt batteries hooked in parallel to give extra battery life. There is a ferrite core loopstick antenna located in the plastic handle in order to get it away from the metal cabinet.

The receiver has excellent tone and power output with good sensitivity and selectivity. A vernier dial makes tuning very easy. Coming in next *OTB*: The radio to look for if you enjoy broadcast Band DX.

The TELEVISION RECEIVER

Editor: Jack Davis
63 Midchester Ave., White Plains, NY 10606
All correspondence requires SASE for reply

RETAIN, RESTORE, REPLICATE?

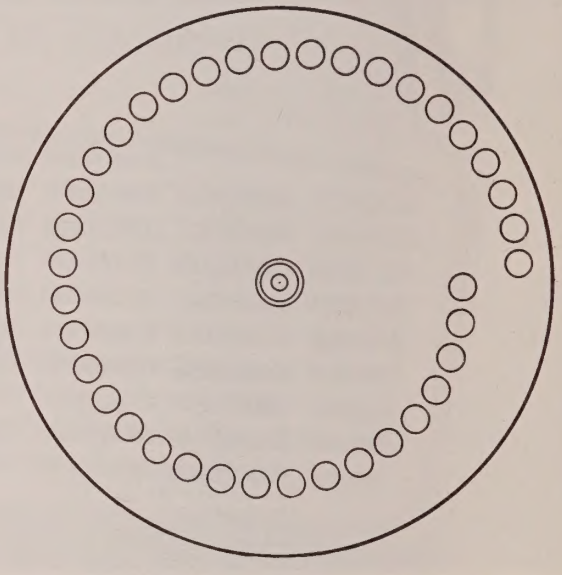
Now that antique televisions have become established as desirable collectibles, a major problem prevalent in all of the other specialties that interest our members has emerged to provoke a controversy among TV collectors.

When a valuable TV is acquired, it is usually inoperative because of age and decay. Purists say that restoration should be kept to an absolute minimum with all of the original components intact. To do otherwise would be sacrilegious and render the collectible almost valueless. Other collectors say that it is important to have working models instead of static displays. They feel that we should become aware of what the state-of-the-art was back in the early days and how the sets performed.

Making replicas of old time equipment has also been contentious. The consensus seems to be that it is acceptable as long as there is not attempt to pass off replicas as originals. Many articles have appeared describing such activities. All of us are familiar with Mel Comer's AK breadboards and Floyd Lyons' amazingly accurate recreations of old time circuits. They all answer the natural curiosity we have as to how the early sets worked and their level of performance.

As an objective observer, I can understand the quandary many of us are in when the subjects of retention, restoration and replication come up. My personal inclination, because my early years were spent in radio servicing, is to make anything I own work. However, I scrupulously follow the original circuit and confine any replacement to identical values. Early electronic sets have hundreds of capacitors and resistors, and extensive replacements are necessary to achieve performance. Working on early radios involves very few of these components and it has become acceptable to bury a replacement in the old shell so that the appearance remains the same. Obviously, this is impractical with a TV. I also feel that if the TV had not been abandoned, it would have been maintained with contemporary parts. **As long as there has been no change or enhancement of the original circuit or exterior appearance, then the integrity has not been compromised.** I take particular pride in being able to demonstrate any of my early sets and have the viewer see how they performed.

I own several mechanical TV's and have always been frustrated at being unable to produce a picture on them. Our present NTSC transmission standards call for a 525 line picture. The early mechanical sets varied from 24 to 60 lines so there was no simple way to get them to work. Ed Taylor, Tom Burgess and Richard Brewster all have successfully demonstrated mechanical TV, but the door was opened for anyone owning a scanner to get a picture when Peter F. Yanczer was able to record signals from the apparatus he described in the *OTB* (August '87) and put them on audio tape. Now, anyone with a good tape deck and amplifier can get a scanner to work. To me, it is nothing short of miraculous to see a picture on a scanner that is almost 60 years old!



Therefore, I was surprised and concerned when my friend, Ken McIntosh (first winner of AWA's Taylor Award) seemed to take exception to what Peter had accomplished. I received a copy of a letter that Ken had sent out after he had received a copy of Peter's book "*The Mechanics of Television*". In it he asked the following question; "*Will the publishing of modern mechanical designs – a) Interest the collectors of genuine antiques? b) Be appropriate in an antique periodical? c) Divert interest from antique models? d) Reduce the prices of original antique.*" I respect Ken and know him to be an absolute purist but feeling that he had missed the point of what Peter was doing, I wrote him as follows:

"I've always appreciated your response to the questions and problems I've brought to you from time to time as well as the guidance and help you've given to others.

That is why I'd like to discuss your reaction to Peter Yanczer's activities as indicated in your letter of March 8th. I am troubled by the implication that Peter has done something that is im-

[Continued on next page]

VACUUM TUBE STILL REIGN

Tubes are seldom used in present-day equipment except in special applications. One area is an exception: some die-hard audio enthusiasts still feel music reproduction is superior in vacuum tube audio amplifiers. The sound supposedly has a certain "*give*" whereas music from solid-state amplifiers is "*hard*".

To accommodate these audio buffs, the Carver Company has just released its new Silver Seven power amplifier using Gold Aero KT-88 tubes. It has the following features:

-- ultra linear output transformers with oxygen-free copper and silver, pure silver internal wiring and Van den Hul silver interconnects.

-- sitting on marble bases, the amplifier sections are finished with five coats of hand-rubbed black lacquer.

-- the Silver Seven is rated to deliver 475 watts per channel into 4 or 8 ohms and 510 watts into 1 ohm.

-- peak current on the 1-ohm tap is over 35 amperes, bandwidth is 18 to 40,000 Hz.

-- noise is -130 db and distortion is 0.5 percent or less.

The price is $17,500 per stereo pair. Hooray for tubes!

Note of Thanks

to Dick Fish and his crew of "stuffers" who have faithfully placed tens of thousands of Old Timers Bulletins in mailing envelopes the past several years in preparation for mailing. In addition, Dick hauled car loads of Bulletins to the Post Office...and his good XYL Florence provided refreshments for the group.... This issue is the last mailing from the Rochester address. A big THANKS to all the stuffers!

This is also an occasion to recognize the following who will no longer be contributing to the Bulletin: John Chauncy, Joe Polemini, Carl Ziegler, James Hicks, Horace Windgate, Dan Boucicault, Islip Twerdle, Charles Willet, Ernest Hathaway, Jeff Stedwell, Horace Witherspoon, Bob Allen, T. Arthur Johnson, Walt Jennings, G. Danielson and Cicely Blossom-Smith.

They all have very much in common. See page 64 for more information...BK

BREVITY IS THE WORD

Members who have the urge to tell their exploits in the radio field should write seeking approval and indicate length of article.

I always believe in quality – not quantity, that a good story is best recounted in a minimum of words.

(Continued from previous page.)

proper and which might negatively effect the values of existing sets.

In my opinion, what Peter is doing is just the opposite. Peter is certainly not in it for the money but rather the same interest that all of us who own the originals have – namely to find out how they worked and what results were achieved. Up to now, we had to be content with static displays. While there are those who say that is fine, there are others, like myself, who want to see things work. Peter has made this possible by providing tapes in the different formats of the period. What a thrill it was for me to see Felix the Cat on my Baird drum scanner, just as he appeared in 1931!

More important, Peter is making it possible for anyone with average skills to construct his own scanner and produce pictures on it. I am sure that you had no fault to find with Dr. Muchow's two-part series that showed how to build a crystal set with modern components. His articles did not diminish the value of the originals.

By kindling an interest in mechanical scanners, Peter is making everyone aware of this almost forgotten aspect of TV's early history. There is no attempt to portray his designs as "*antiques*" like that "*Gentleman from Queens*" with his so-called DeForest Audions and Fleming Valves.

I think that you should read Peter's book "*The Mechanics of Television*" and recognize its importance in making people aware of a subject in which both of us have such a deep and abiding interest. Because you are a fair-minded person. I think you will find that you have been too hasty in judging Peter's intentions as well as the importance of his work. Knowing both of you, it is my sincere hope that the future will have the benefit of your mutual contributions in preserving and broadening the appeal of the mechanical television era".

I would very much like to hear from readers who might have opinions to express. When an antique is acquired, how much can be done to restore it? Should it be made operative? Is it allowable to make replicas of original apparatus for learning purposes? Bruce Kelley, who has seen my working models, tells me that the various proponents will stick with their positions. It is my feeling, however, that television differs somewhat from our other collectibles and that most of us will prefer working models that have been skillfully restored rather than just museum displays. What do you think?

- 30 -

I N - H O U S E

Aaron Solomon,VE1OC sent a clipping telling of a Marconi Museum being built at Glace Bay,Nova Scotia-- the site of the famous Marconi station which initiated first trans-oceanic communication.The venture is subsidized by the Canadian Government and Canada's Italian community.....I talked to John Gubernard, K2LSX, a member of the Armstrong Alpine Amateur Radio Club, who told me there is a movement to make the New Jersey Alpine site an Armstrong Museum.

The Netherland's publication "Radiohistorich" noted contents of a recent OTB. My ability to read Dutch is limited so had difficulty translating comments on the Frank Jones' article and Gerry Tyne's book. Received some flack on my comments regarding an auto installation that cost $20,000. It now appears that this has been topped by a customized Porsche with an audio/video system that cost $250,000. This outfit has 7 amplifiers with a total of 500 watts,14 speakers and a VCR in the trunk that connects to a TV set installed in the glove compartment!

We were surprised one morning back in the spring while watching NBC's "The Today Show" when an old friend appeared on the TV screen...Gerry Wells of London, England. The TV crew wandered around his fabulous radio museum zooming in on old receivers and finally a closeup of Gerry telling of his passion for old radios. With four floors of radios spreading out into several out-buildings, it may be one of the world's largest radio museums. I shouldn't say this since AWA member Guy Biraud's equally famous chateau also has an unequalled collection of early radio and wireless equipment.....

Speaking of collections, I visited Norm Smith (Florida) this past winter and was stunned when he invited me into a room with all four sides lined with receivers. His collection consists of over 1000 sets most of which are of the smaller novelty type such as radios in cameras, watches, etc...a fascinating place...

Some of us have been wondering about an expensive book (at low market price) printed in a foreign country that has been flooding the market recently. The clue came from a Book Review in the N.Z.V.R.S. Bulletin. The book has gorgeous color pictures of ordinary radios made in the 30's and 40's by a clever photographer and touch-up artist-- in fact, the receivers look almost too good and that is wherethey may have gone too far since the receivers have little technical merit. Let's hope someone will reveal the true story about current interest in these sets.

I was asked if I were a member of the QCWA...I am No.1351 and was licensed in late fall of 1929 as W8ACY. My call first appeared in the early 1930 Government Call Book....John Whiting sent a clipping from the NY Times telling about the development of a radical vacuum tube design by S.R.I. The major advantage of a vacuum device is that electrons can flow through a vacuum more than 10 times the speed than semi-conductors made of gallium arsenide, and more than 20 times their speed made of silicon.The new experimental devices use a cold cathode thus eliminating heat problems.

Stewed tomatoes really work. Remember the short article in the Feb. '87 OTB telling about treating discolored aluminum in a heated dish of tomatos? Bob Dennison tried it and sent two sharp pictures of tube shields "before" and "after" treatment and the results were amazing!

Several AWA members had a recent visit from Pat Leggatt, Chairman of the British Vintage Wireless Assn. His trip included a visit to Bro. Pat's Tube Museum, Pres. Peckham and the AWA Museums. Pat seemed genuinely interested in AWA activities and was surprised to find so many early Marconi pieces here in the States. Hopefully, AWA will join BVWS for a joint Meet next year.

AWA tape library recently acquired an extremely rare reel-to-reel tape of Maj. Armstrong talking on landline to his cohorts associated with the Yankee Network on Feb.14, 1941. The original was cut on a disc and then to tape thanks to N1AYU.

Congrats to Anders Widell and Bro. Pat Dowd for having received their doctorates. Anders' is a medical degree and Pat's is an honorary for outstanding work in the field of science.... -- H.J.W.

The BOOK COLLECTOR'S CORNER

Editor: James Kreuzer, N2GHD
6270 Clinton Street, Elma, NY 14059
All correspondence require SASE for reply

RADIO'S 100 MEN OF SCIENCE

by Orrin E. Dunlap Jr.

Copyright 1944, 294 pages, 97 photos

Whether new collectors or experienced historians, we have all felt the thrill of meeting men who had a part in radio's development. Some "*old timers*" were fortunate enough to work alongside the inventors themselves. As time moves on, though, and radio collectibles become scarce, so too do first-hand accounts of the wireless pioneers.

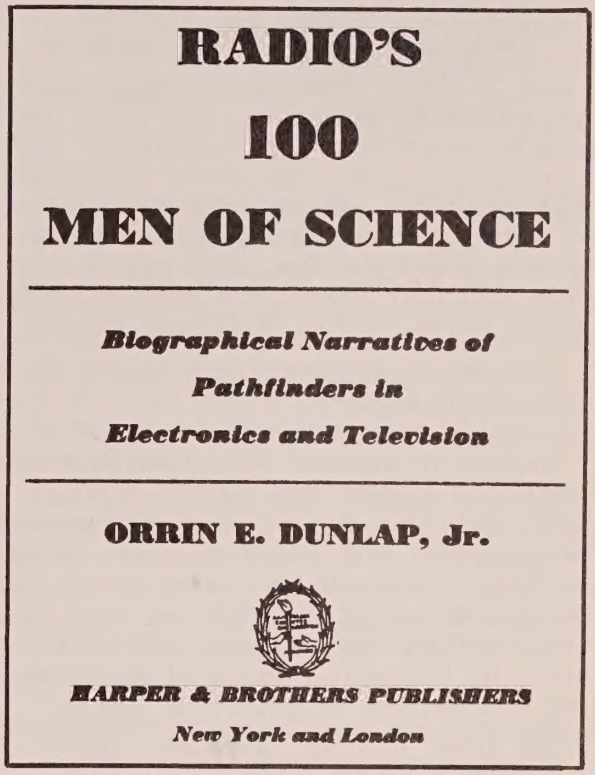
Helen Dunlap recognized the need to capture and preserve the spirit and work of these special scientists. Acting upon his wife's suggestion, Orrin interviewed as many inventors as possible. Other information was derived from personal writings and scientific papers. *Pioneers Of Electricity* by J. Munro, written in 1890, was another excellent source for biographies as early as Thales, of Greece. George Clark, the RCA historian, also assisted in compiling accurate data. Pooling these accounts, he picked one hundred men to represent the major developments of radio. The top ten he listed: Faraday, Henry, Maxwell, Hertz, Marconi, Fessenden, Fleming, DeForest, Armstrong, and Zworkin.

These hundred scientists built upon each others' discoveries either by accident or careful and logical experimentation. Marconi's stroke of genius molded their work into a magnificent new communications medium.

It was no easy task. Alone, using primitive, often homemade tools and little financial resources, the inventors strove feverishly on. Often in the moments of glory, patent battles tore their work to shreds. They were the beginners; now research laboratories have taken over.

Dunlap organized the book into two major sections. Part I, *Pioneers Of Electricity*, ranges from Thales to Loomis. Part II, *Pioneers Of The Radio Age*, originates with David Hughes and his microphone. George Brown, a specialist in radiothermics, has the honor of becoming the final entry in the book.

Radio's 100 Men Of Science is a book every radio collector or historian will treasure. Dunlap's style is concise, yet quite enjoyable, providing a fine source of entertainment. It is invaluable when a quick biographical reference is needed, inspiring further studies of those men who paved the way for the inventors of tomorrow.



Orrin E. Dunlap, Jr. was Radio Editor of *The New York Times* from 1922 to 1940. He also wrote *The Story Of Radio, Marconi: The Man And His Wireless*, Dunlap's *Radio and Television Almanac*, *The Outlook For Television*, and *The Future Of Television*. He lived in Niagara Falls for some time, and has a nephew in Wisconsin who is a current AWA member. Arno Press reprints are available through John Terrey, of *Antique Radio Classified* at $25.00 postpaid.

James and Felicia Kreuzer

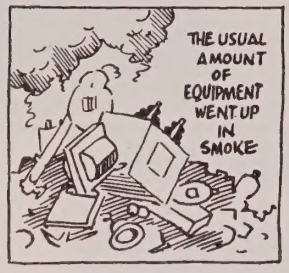
FOR THE MUSEUM LIBRARY

Vic Franzoni (Italy) and Bob Lozier donated an unusual new book to the Association's Library. Titled: "Il Mondo In Casa", it is a large 300 page volume beautifully illustrated with both color and black & white prints of early radios most of which were made in Italy.

The publisher and photographer are to be congratulated on their efforts. Unfortunately, the text is in Italian but this should not prevent the radio historian from admiring the unusual contents.

OLD TIME TRANSMITTER CONTEST

A MEMORIAL TO LINC CUNDALL, W2LC



REVIEW OF THE 1988 OT CONTEST

STATISTICS: 105 members participated with 8 not submitting logs. 22 newcomers joined the fun. With regret, we note that four have since become Silent Keys: W1DM, W1XV, W7IC and W9GFS.

105 members participated with 8 not submitting logs.

Anyone in amateur radio can have a madhouse contest and they do (See QST, but AWA is unique in that members contest with Old Time gear, build it, love it and talk and write about it. So says Bill, W2IXH. What we need instead of just the hint with TX30,RX35, etc. He suggests periods of ragchewing and periods of gathering points.

How about this for January, 1989?

JAN 18 6:00 PM- ragchewing and testing to midnight. Contest JAN 18 midnight (0500Z) to midnight, JAN 19,
For second period, repeat this schedule on JAN 21 ending midnight (0500Z) JAN 22.

Let's give it a try! Perhaps we can gather more Western contesters in the late hours.

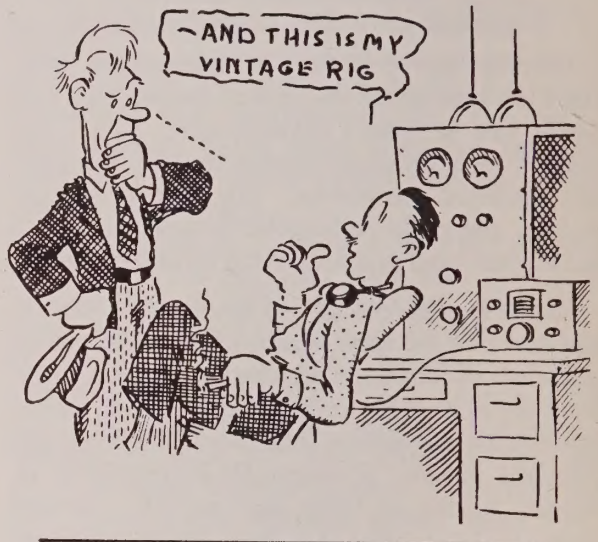
Both W1BVL and W2HIN would like to see more activity on 160 meters. About 9:15 PM (0215Z) is optimum according to Dick.

W2ER, N2GIG, W2LYH, K4JO, W5KL, AK7M/1, KB1MW and VE3CLX are all building new OT gear or promising to start soon while W3OER and W8CZR are retiring so that they can devote full effort to OT CW next year. W2KTU says everything is old including the operator!

Ingenious N2FCZ connected a BC-221A as BFO into a Philco 10-195 console!

Bud, K2LP, found his ZULU clock was one hour off several days after the contest without effecting his score. Cliff, W2AFE, repairs KUKU clocks--how long would it take for a cuckoo to send 2300Z?

Bill, W3HWT, got an early start and built a 1916 tubular Audion set from QST to use next year. Treat it gently OM, they are great detectors but very fragile.



(A.R.R.L. permission given to copy W1CJD's cartoons for amateur use.)

W3INV says there are too many MOD-MODs. Judging by all the foregoing, the gang agree$ and will do something about it. W1BPI has already switch to OT gear.

Tommy Thomas, W2UK, informs us that all his old equipmenthas disappeared but we bet yen for the bright old tubes will get him to the flea markets. (Remember the AWA Annex has a surplus of old gear for members at no cost. You have to pickup however.)

In contrast, W2AFE has several OT rigs and N4EE has a choice of 4 xmtrs! Cliff would like to hear OT gear exercise on the 8:00 PM 1st Wednesday of the month of the AWA CW Net.

W1SZJ is amazed that OT QRP gear does do well. He attributes its success to courteous and efficient operating by the Old Timers-- no scrabbling or jamming in pileups, just cool and patient operating.

Horace, W1AB, needs help getting heavy OT gear up and downstairs. He has repurchased his original NC-101X ('38) for next year's contest. Somebody please give him a lift.

W2AAU QSO'ed J37XC on all bands. Did you? Fb Friend!

RESULTS OF
AWA OLDE TYME CONTEST

K2OA wants more elbow room om 40 such as 7030 to 7050-- will do next year.

N4FS says QRP (5 watts) was a great thrill. Just look at his fine score !

K4MOG wants two (2) contests per year. We already have two: the October QRP Party and the Lincoln Memorial in January. See OTB for details.

WD8OFB quires, "How does an xtal controlled xmtr QSO another xtal controlled xmtr? Answer #1-- try to find ops who know how to tune a receiver. Answer #2 --buy enough xtals like Yardley Beers, WØJF who covers each band at 1 Khz. intervals with a large rotary switch. And lastly, Answer #3-- cuss a lot and call longer.

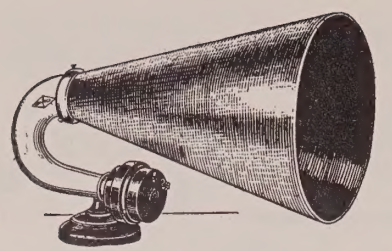
KCØCW offers another solution. He had one xtal about 7050 kc. No AWA stations there but he found a pileup at 7040. He quickly found a 7000 xtal and started to grinding it upward. After a few swipes he found it at 7042, slapped it into the xmtr and made a few contacts. A close shave!

When KCØCW first built his xmtr from May, 1939 QST, it wouldn't work. June 1939 "Feedback" disclosed a circuit error. His friend Frank said, "Gee, Sheldon, when you build a replica you even reproduce the mistakes!"

VE1OC had receiver trouble and VE3-BDV moved back into Toronto area to a new job and QTH. His new home is near a HV power line..and you guessed it, lots of noise. Hope Canadian Hydro co-operates so we can hear that simulated spark again Lou.

The NEW SCORING SYSTEM gave a few stations minor problems but on the whole it worked out well.Many, many thanks for all your letters-- I can't answer them but they are appreciated and serve as the basis for our Contest report. 73, Ken, W2BGN

No.	Station	Power	Points
1.	W1YG	8. watts	2364
2.	W2VDI	9.5	1430
3.	W2ER	90.	1404
4.	K4TS	90.	1386
5.	N4FS	5.	1310
6.	K2OA	6.	1205
7.	J37XC	100+	1136
8.	N3AYU	65.	1122
9.	W8BFD	80.	1053
10.	W2AN (ICE)	60.	1044
	W8AU	90.	1044
11.	WB4OUF	1029	
12.	W4NM	1026	
13.	W4COC	1024	
14.	W8VSK	1022	
15.	W3DB	750	
16.	WA3GMS	717	
17.	W2LV	692	
18.	W2HIN	681	
19.	W3EAN	648	
20.	W2IXH	600	
21.	W4VBX	594	
22.	W2HDE	585	
23.	K2LP	570	
24.	K4MOG	513	
25.	W3VVS	495	
26.	W2FB	479	
27.	K2BBK	477	
	W3INU	477	
28.	N4EE	476	
29.	W2KTU	468	
30.	W2BGN	428	
31.	W2UK	412	
32.	W3HWT	387	
33.	W2LYH	366	
34.	K8IMW	360	
35.	W2FW	348	
36.	W1SZJ	320	
37.	W3OER	312	
38.	KCØCW	302	
39.	WØFXY	288	
40.	W2AAU	282	
41.	K5CF	276	
42.	W4OTN	273	
43.	W2IEG	264	
44.	WB9EIE	260	
45.	W1DM	246	
	KMØL	246	
46.	W1AB	234	
47.	W1BPI	229	
48.	VE3AFW	228	
49.	AA4RM	224	
50.	W1GSO	222	
51.	N2FCZ	210	
52.	W6DJX	200	
53.	KA3GXP	180	
	W6VX	180	
54.	W1DX	177	
55.	VE3CLX	176	
56.	K4IM	168	
	W2EFI	168	
57.	W8AQ	164	
58.	K2IC	159	
59.	W8SS	154	
60.	W2EG	153	
	W4AWS	153	
61.	W2VVG/4	138	
62.	W2FYU	137	
63.	AF3V	132	
64.	WA3VAT	124	
65.	W1MCG	117	
66.	W2MPK	114	
	K2WW/7	114	
67.	W2AFE	96	
	K6TDP	96	
	VE1OC	96	
68.	W4AIW	94	
69.	W2PHT	84	
	W3RG	84	
70.	W7OD	78	
71.	W9GJS	76	
72.	VE3HD	72	
73.	KD2OM	70	
74.	W5KL	64	
75.	W1BVL	62	
76.	KE2O	54	
	W7SEH	54	
77.	WA5VLZ	53	
78.	AK7M/1	48	
79.	KB3SI	42	
80.	W2EJ/7	38	
81.	N2GIG	36	
	N2FWK	36	
	W1YJ/4	36	
82.	K4JO	32	
	N9TT	32	
83.	W7LIX	28	
84.	K6RTU	27	
85.	K6ARE	20	
86.	KB1UV	16	
	KB2OR	16	
87.	W8CZR	14	
88.	W6SKO	8	
	W7LOG	8	
89.	VE3BDV	4	



The LOUDSPEAKER

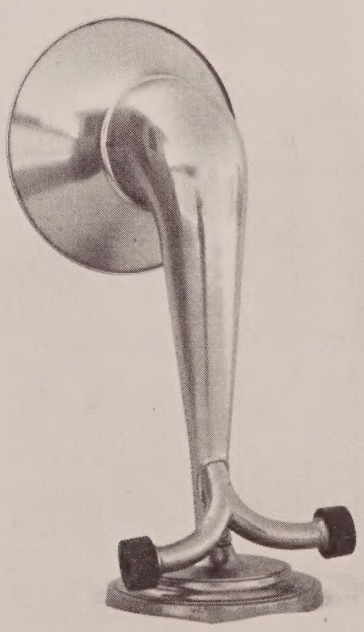
Editor: Floyd Paul, W6THU
1545 Raymond, Glendale, California 91201
All correspondence requires SASE for reply

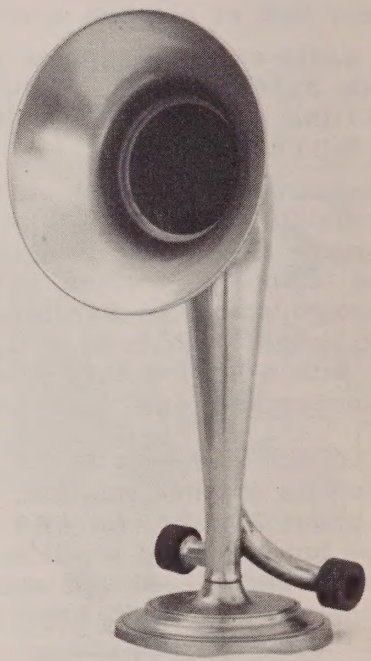
AN UNUSUAL FIND

In mid September of 1987, Dorothy and I flew to Kansas City, Missouri, from Los Angeles, California to rent a car and to continue our trek to the annual AWA Canandaigua meet. Dr. Bob Lane, collector of old radios, active in producing the MAARC newsletter and a gracious host for two days and nights in Kansas City, had recently moved some radio equipment to his new home. He had left many sets and ancillary parts in his old house where he and I wound up the second day looking over his surplus and "*for sale*" items.

One horn that caught my attention had only the letters B.S.C. Co. on the base. Having a soft spot for aluminum and chrome finished horns, I soon negotiated a price with Bob and purchased the horn along with another unusual horn, a "*Moon*" made by Wilson Utensil Company.

All through the Canandaigua meet the initials BSC haunted me. Were they '*B.. Stromberg Carlson, or Baker Smith* ..... or something simple I'd overlooked? No! Was the horn British? No. It had too many American shapes in the hardware.





Upon arriving home in Glendale, California and sorting through any number of references, listings, and deciding the company was not in my *Radio Horn Speaker Encyclopedia*, I put the search to one side. Several weeks later I found a copy of *The Radio Trade Directory*, November 1925, published by McGraw Hill Company, Inc. I searched a column listing of Loud Speakers (no pictures). Eureka! A company called Brittania Silver Casting Company in New York made a "*Humantone*" horn. What does a casting company make? Castings! My horn has a cast aluminum base, a cast aluminum neck and a brass bell. A natural. The horn has been cleaned, polished, spray coated and added to my collection.

Will all buyers of my book "*Radio Horn Speaker Encyclopedia*" please make note of this horn's existence in Chapter Six, entitled "*Manufacturer's Encyclopedia*". Please drop me a card if you have a B.S.C. Company horn.

Moral of this story, search, search, and search.

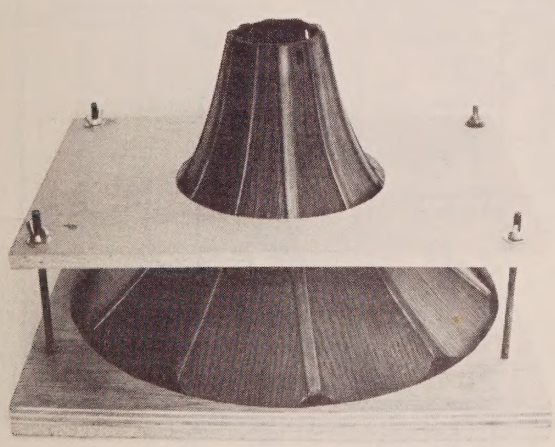
JIG TO REPAIR AN AMPLION AR19 HORN SPEAKER

Bob Murray Winnipeg, MB Canada

The Amplion Dragon horn speaker has an attractive wood petal horn flare, made either of oak or mahogany. If a specimen has been submitted to moisture or physical abuse, the glued joints between the petals can become separated. The horn then spreads and may become distorted out of round. The jig described here has been used with good success a couple of times in restoring these horns. The dimensions could be adjusted to prepare a jig for another similar horn.

The base is made of two pieces of 16" square scrap plywood or particle board, each ⅝" thick. A circular hole 14¾" in diameter is laid out in the center of one of the pieces and cut out carefully with a jig saw or scroller saw. The piece with the large hole cut out of it and the other 16" square piece are glued together to form a sandwich. The horn will be placed with the petals down into the 14¾" recess in the top of this assembly, as shown in the photo. The inside of the jig saw cut will come into contact with the speaker, and should be sanded smooth.

The movable piece is made of particle board, ½" thick or greater for stiffness. It can also be 16" square. The one in the photo is 16" x 12", which is sufficient. A hole 7" in diameter is cut out of the center of this board. A ¼" radius round shoulder should be routed around this hole on one side of the board. The rounded edge will be placed face down onto the horn flare.



Fixture (jig) firmly holds horn speaker in place.

Before the horn is placed in the jig, lay movable piece onto the base assembly (with the rounded edge face down), and very carefully line up the two circles so they are centered one above the other. It helps if each circle was first centered on its piece of board and if the center is marked on the base assembly. Clamp the movable piece to the base at the four corners. Drill a ¼" hole in each corner for the 6" x ¼" carriage bolts, which are inserted from the bottom. Mark clearly on one corner of the movable piece and the base assembly so that they are always put back together the same way.

Before gluing the horn, place it face down in the jig and place the movable piece over it, and slide it gently down the carriage bolts until it comes in contact with the speaker. Place a flat washer and wing nut on each bolt and gently begin to tighten them, keeping each nut close to an equal distance along its bolt. As the flare is drawn slowly back into shape, keep checking the alignment of the petals. Work the separated joints back and forth with your fingers if necessary to align the parts. There is no hurry at this stage, and it is better to work carefully to be sure that nothing unpleasant is happening to your valuable speaker.

The speaker is first drawn up like this without glue to be sure that it will return to its original shape, and that evidence of the separations will disappear. When this has been demonstrated, gluing can proceed. For this next step in the process, the jig will have to be clamped more rapidly over the horn flare, and the separations manipulated together more rapidly. Just how rapidly depends on the setting time of the glue.

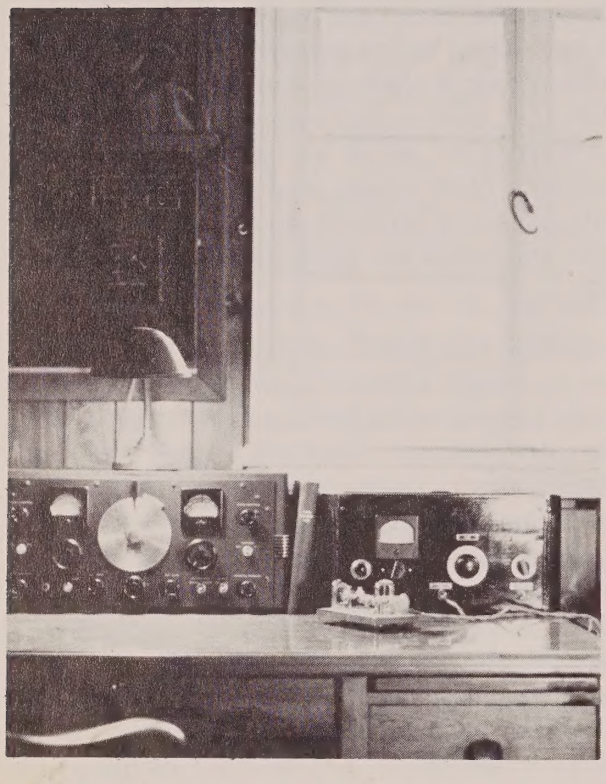
Glue drops can be wiped off quite readily from the outside of the flare. For the inside, the services of someone with a small hand might be enlisted. A 4" diameter hole cut in the bottom of the jig might also be useful. Because the design of this flare places relatively large stresses on narrow glued surfaces, the freshly glued speaker should probably be left some weeks to dry in the jig.

AMATEUR RADIO

Editor: Ken Gardner, W2BGN
42 Oakdale Avenue S., New Hartford, NY 13413
All correspondence requires SASE for reply

THE OLLIETRON MODEL A

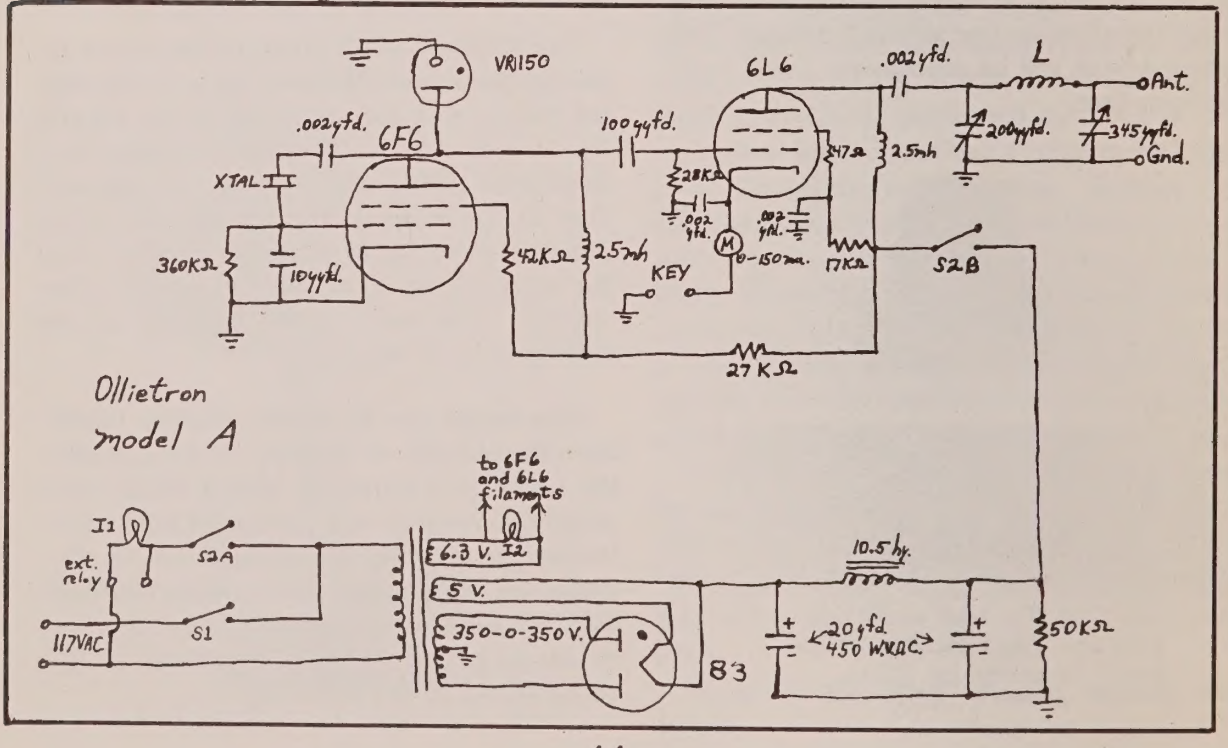
by Oliver Steiner, K2BBK

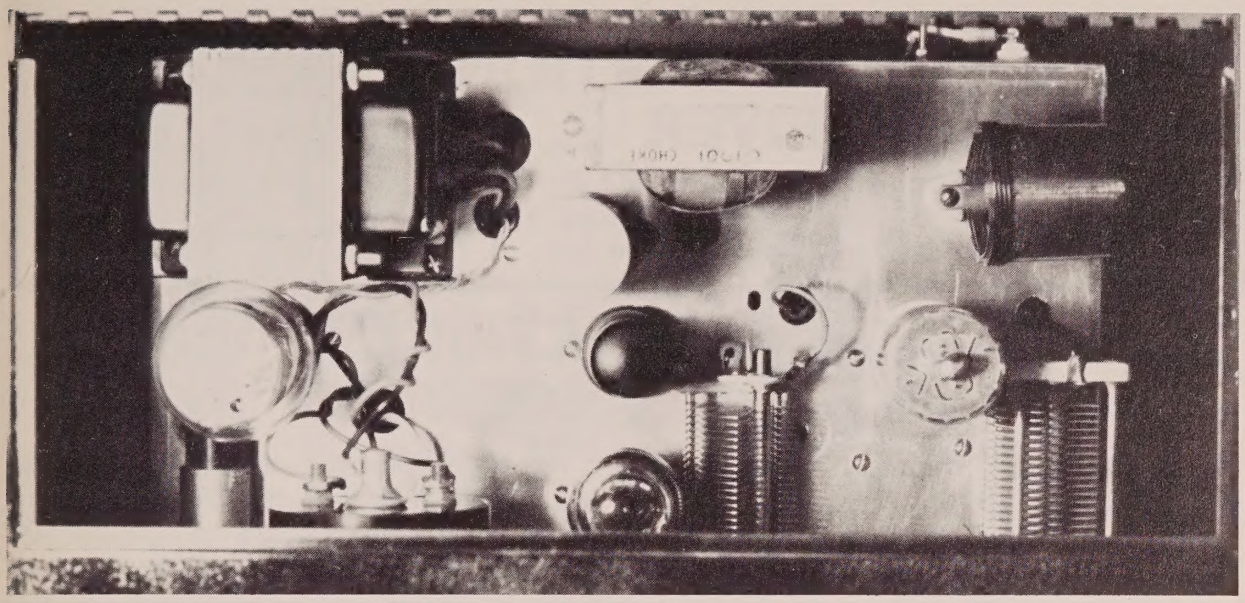


1939 Station at K2BBK

Why do we frequently enjoy our vintage radios more than contemporary gear? The present day equipment outperforms the old stuff on most every engineering specification, yet we often prefer to handle, look at, listen to and operate our ancestral aether agitators. Perhaps the old radio, with its illuminated dial, gleaming brass, colored lights and warm glowing filaments is the lesser communications tool but the greater grown-up's toy, the greater art object. The Ollietron model A, a 1939 style homebrew c.w. transmitter was built with this in mind.

A 6F6 Pierce oscillator is regulated by a VR150. The lovely violet light of the VR150 dances when keyed, as does the blue glow of the 83 mercury vapor rectifier in the built-in power supply. A 6L6 P.A. operates on 160 through 20 meters with plug in coils for each band. Power input to the final amplifier is about 20 - 35 watts with 400 volts on the plate. Switching on the power illuminates the amber face of the P.A. cathode meter, and turning on the high





Top view of 1939 transmitter.

voltage lights up the letters "HV" on the jewel of a panel lamp. Metal tags identify the controls, and a brass nameplate graces the upper right front panel.

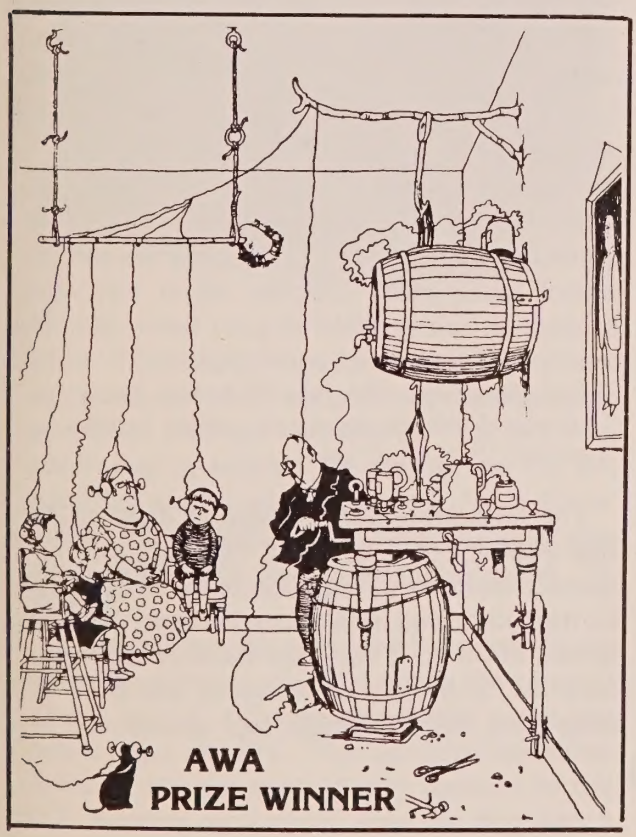
Believing that too much is not enough when it comes to front panel lights and gadgets, the inclusion of an electron ray ("*green eye*") output indicator to the left of the meter is being contemplated!

The Ollietron model A has worked all over the country and provided many hours of enjoyment during and since the 1987 OT contest.

- 30 -

COIL DATA ("L")

Wavelength	Number turns	Diameter
160 meters	60 turns closewound	1½"
80 meters	32 turns closewound	1½"
40 meters	20 turns 1½" long	1½"
20 meters	10 turns 1" long	1½"



1929 QSO PARTY

1929 Vintage Equipment

Wednesday & Thursday, October 19 & 20

7 PM EDST until midnite
Operation approx 3590 kc.

Send "CQ AWA". Make as many contacts as possible with other members using vintage equipment. Exchange RST, power input and year xmtr.

The Old Time Transmitter QSO party is open to members using transmitters of 1929 vintage (or earlier) of the self-excited type such as Hartley, Tnt, etc. The power input must be LESS than 10 watts.

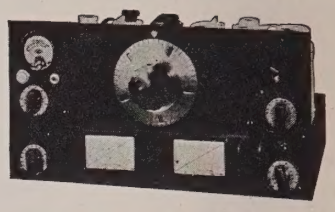
Participants are encouraged to use vintage equipment such as a regenerative receiver if available (but not necessary) and a straight hand key.

Try to keep your power below the 10 watt level. Bring your OT gear to the AWA Conference Amateur "meet" Friday morning.

Send copy of log with equipment used to:
Bud Hall, K2LP, Box 974
Eastham, Massachusetts 02642

The COMMUNICATION RECEIVER

Editor: Bill Fizette, K3ZJW
R.D. 1, Box 55, Henryville, Pennsylvania 18332
All correspondence requires SASE for reply



THE WESTERN ELECTRIC SERIES-9 AIRCRAFT RECEIVERS

INTRODUCTION

The history of the communication receiver is incomplete without a chapter on the development of equipment for use in commercial aircraft communications. This work, a natural result of the demand for increased reliability and safety in air transportation, proceeded in parallel with the rapid advances in aircraft technology during the late 1920's and early 1930's.

In 1928 the whole field of radio communications for aircraft services was still relatively new. To the already existing military radio services were the new air navigation aids to be established by the U.S. Government under the Air Commerce Act, and the yet undeveloped communications frequencies above 1500 kc.

In Europe, radio developments for commercial aviation had been underway for several years, centered around 315-350 kc, and in the U.S. marine navigation radio beacons operated around 300 kc.

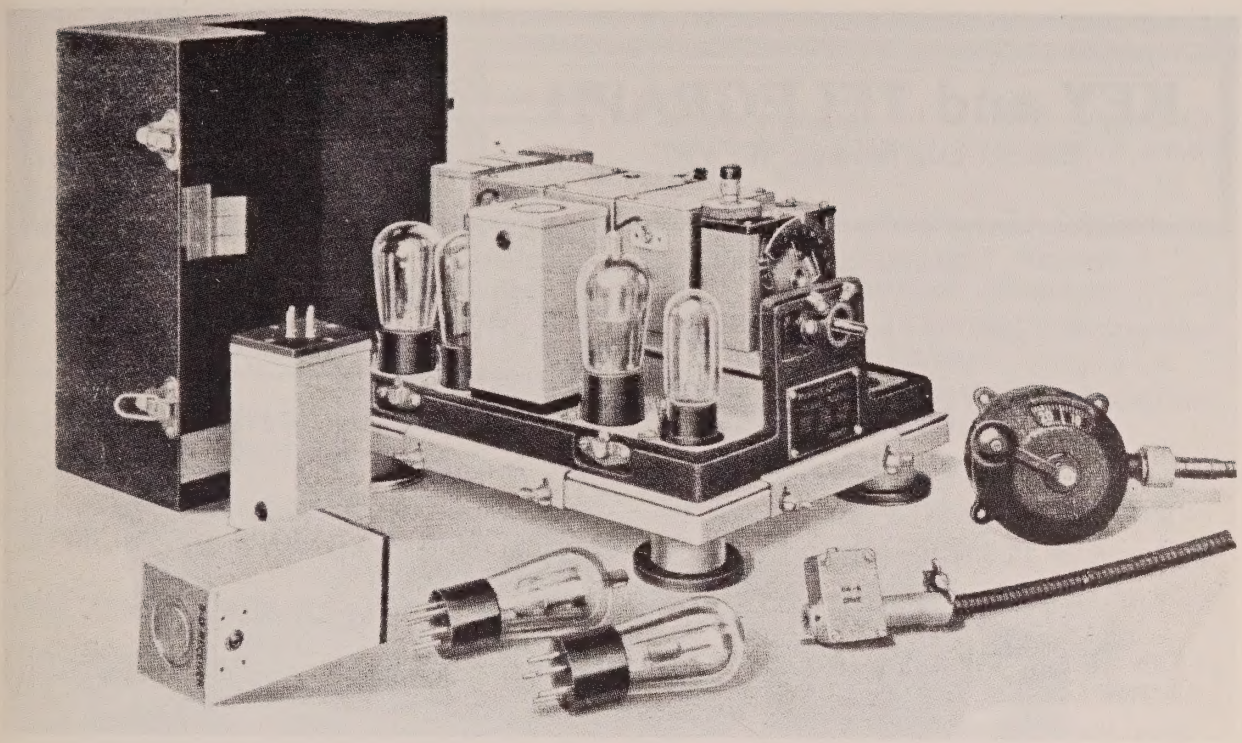
The 1927 International Radio Conference had recognized these established practices, and the International Convention allocated 285-315 kc for radio beacon services and 315-350 kc for aircraft communications service. The international aircraft calling and distress frequency was 333 kc.

By 1929, however, the work was still in its infancy and much remained to be done. The Bell Telephone Laboratories, the research arm of Western Electric and AT&T, reported in December on extensive work in the field in a presentation before the Great Lakes District Meeting of the American Institute of Electrical Engineers. The work included "*a complete aircraft radio-telephone system designed for the use of air transport lines and an airplane radio receiver for reception of government radio aids to air navigation...*" Included were the Series-9 receivers, the subject of this column.

Priority in development was given to aural beacon receivers, to enable aircraft to receive the low-frequency navigation signals and aviation weather reports. Early American manufacturers of this equipment were the Radiomarine Corporation of America following RCA designs, Stromberg-Carlson using designs from the Aircraft Radio Corporation of Boonton, New Jersey, a subsidiary of Radio Frequency Laboratories, and the Western Electric Company, with equipment designed by the Bell Telephone laboratories. In addition, many of the air transport companies used amateur short-wave receivers in their aircraft and ground stations.

The Western Electric 9-A low frequency beacon receiver, with knob added for local use.

The Bell Laboratory Record of April 1929 had announced a new and compact low-frequency radio receiving system for aircraft, to be manufactured by Western Electric. Known as the 6008-A, it included the 8-A four-tube receiver. In the works, however, was the 9-A long-wave receiver which was announced in



Western Electric Series-9 receiver showing the removable coils and the remote tuning head. The filament ballast lamp is in the front corner.

December, 1929. This was a component of the 6109-A (or -B, depending on the power source) receiving equipment, with a frequency range of 150 - 500 kc (1200 - 600 meters). The circuit was designed around four #245-A and one #244-A WE tubes, with the filaments in series with a 6-B ballast lamp to compensate for voltage fluctuations. Weight of the receiver was 17 pounds, while the complete installation including the receiver with mounting, the remote control devices, and cables and plugs weighed in at 31 pounds.

Power was derived either from the 12-volt aircraft battery, a dynamotor, or a dual voltage wind-driven generator. The circuit consisted of two RF stages, a space-charge detector, and two audio stages. The three tuned circuits used plug-in coils sealed in copper cans. The output impedance was 250 ohms, designed to feed headphones; loudspeaker operation was not considered. Volume was controlled by varying the voltage on the RF amplifier screen grids, referred to in the literature as the "*shields*". The detailed circuit diagram referred to this connection as the "*E-Shield*".

The 9-B high-frequency receiver was identical in appearance and essentially the same in circuit layout, differing principally in the antenna input circuits. This set used the same antenna and the same power sources as the 9-A receiver, and could even be tied into a common output circuit so the pilot could listen to both at the same time.

To cover the entire frequency range of 1500 to 6000 kc, three sets of coils were needed. These were matched to the individual receiver at the factory and designated as L (low), M (medium), or H (high) for the frequency coverage. A coil group number was added to avoid coil mixups; a typical coil set might be marked L-12. The antenna could be either a random wire or a tuned loop.

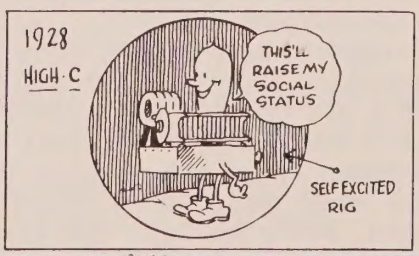
The 9-D low-frequency receiver, an updated version of the 9-A, was introduced in 1932. Because of space limitations, the description of the 9-D and the rest of the story will be given in the next column.

-- K3ZJW --

1929 QSO PARTY

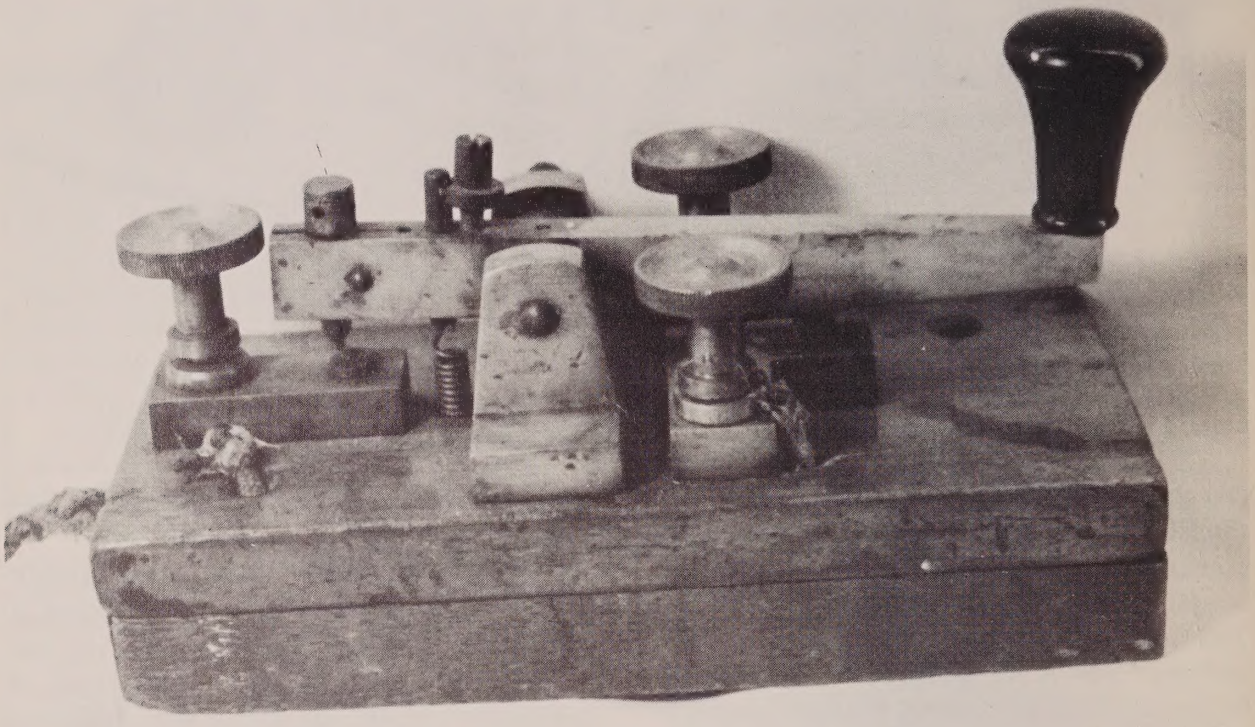
Don't forget the date to try out your early QRP transmitter:

OCT. 19 & 20, 7 PM EDST
Approx. 3590 kc.



KEY and TELEGRAPH

Editor: Lou Moreau, W3WRE



English G.P.O. key circa 1870's. These G.P.O. keys all used straight lever open circuit design and were introduced by Siemans. Various forms of this type were preferred by European operators. *(W3WRE photo)*

QUE: *I have been trying to collect keys but it seems that nothing is available except old World War Army stuff. Where can I find other types of keys?*

ANS: Actually keys of the Second War are worth collecting. In fact, there are over one hundred different types including Army, Air Force as well as Navy keys. These instruments range from the steel lever J-38 styles through to such instruments as those strange types created for special purposes.

As an example, there is the "Gibson Girl" transmitter type used for distress calls from a life raft, or the equally strange J-51 that triggered a light signalling device. There are so many that these keys could make up an entire collection, and, oddly enough, few exist today and have literally become "Collectors' Items" because they are almost 50 years old.

Keys are where you find them. Flea markets for example, or don't be surprised to find one in a pawn shop, the neighbor's garage sale or the local ham club-- just start talking and asking. One collector even got one from his garbage collector who had found it in the trash. Just start looking and hunting and you'll start finding them.

QUE: *What about keys from other counries? How far back do they go and are they available?*

ANS: They are available as are old U.S. keys. As I said before, just start looking. To paraphase an ancient philosopher, "There is no royal road (sic) to key collecting."

NEW MEMBERS

who are (or were) with the electronic communication or related industry.

Information in this column is obtained from the member's Application Form. If you are not listed, you did not fill in the form properly.

Louis Rainone (K2EDG) G.E., RCA, A.T.& T, Bell Labs

Mark Schlicher, Stats. WDLB,WMAD, WYFE, WZEW, WHMD, KKFM

Lloyd Klein, Westinghouse Mfg. Co.

T.Mitchell Hastings,Former Pres. General Commun. Co.,Concert Network, etc.

Thomas Abell, Stat. WSBT

Michael Spohn (N7JUS) Stats. KUKI. KALF, KLIL, KUUE

Charles Norris, Sears Electronic Service

Dr. Bernard List, Texas Instruments

Benigno Fernandez (KP4DN- PortoRico) Transmitter Eng.

John Manns (Victoria,Australia) Radio Technician

P. De Bruin (Netherlands) Radio Electronics

Kenneth Lum-King (K6BAZ,KH6JM) Schonner WOFY,Station KGU

Cresson Donbar (K4YL) BC engineer, G.M. Radio engineering

Arthur Iverson (W8TMS) Stats.WWJ,WDIV

Christopher Dionisio, Station WGAO

John Wallin, U.S. Naval Communication Station-Stockton

Wolf Merel (W2SLI) Applied Controls Co.

Bob Lowry, Tektonix, Inc.

Edward Zyszkowski, Gen. Manager of P.B.S. station WJHU-FM

Rick Van Krugel (VE7FOU) Bull Harbor Coast Guard station VAG

Clarence Bauer (KP4DE, VP2DE, HK3X CX2CL, etc.) Govern. service

Paul Mattei, U.S. West Cellular

Wm. Adams, General Manager Electric Utility Company

Sid Emmons (K8ZSS) Acme Electric Co.

James Hanlon (W8KGI) Station WCPO

Alred Maistriaux (Brussels, Belgium) Manager Radio

Keith Carson, Announcer stats. WRFM, WIVX,WSTC,WYRS,WVOX,WRIU,WNGS, WLIB, WBLS.

Albert Houde, Radio & TV Service So.

Anthony Kriwokulski, Pioneer Communication Company

Thomas Pitman (KB8CFE) CW operator U.S. Air Force

Michael Pozzani (W3SV) Broadcast and Maritime servicing.

Fred Cunningham, Two-way radio service

Harvey Nichols (W2ERT) RCA Corp.

Robert Mawdeley (N8FTT) Radar R&D

David Rosenberg, Republic Radio

Carleton Green (W2PWU) Stats. WSAY, WBTA, WBEN, WHAM, WGVA

Robert Fanetti (NN2M) Sylvania and Magnavox

Patrick Leggatt (Surrey, England) British Broadcast Company

AWA NETS (EST/ESDT)

PHONE (SSB)

Sunday: 7247 kc. at 12 noon
3867 kc. at 5 PM

Tuesday: 14274 kc. at 2:30 PM
3837 kc. at 8 PM

Mon.-Wed.-Fri.: 3867 at 9:30 AM

CW-- 3584 kc. 4 PM daily

First Wednesday each month at 8 PM

BOOK & MAGAZINE REVIEWS

by Ernest Hathaway

Book review:

THE RADIO AND TV COLLECTOR'S GUIDE

by Guy Biraud

Jonathan Hill covered British receivers, John Stokes wrote about and illustrated receivers made in New Zealand and Australia, Don Matteson gave us a pictorial history of car radios, and Alan Douglas did a superb job in telling about American manufacturers. Now we have a book covering European radios.

Let me tell you about Volume I.

It is a large, heavy 9 x 10¾" softcover book of 256 pages containing an incredible 2000 illustrations ranging from antique telegraph instruments circa 1840 thru 1950 broadcast receivers. (Volume II will feature additional broadcast receivers plus television, tubes, speakers, meters and microphones. This book is in the process of being assembled.)

Each illustration has a brief description of circuit, number of tubes,etc. Sections are divided by manufacturer, i.e. – Ducretet, Federal, Gaumont, Telefunken, Burndept, Marconi, Lorenz, DeForest, Kennedy, etc. As noted by the names, it is truly an international reference book and a valuable informational source for the cosmopolitan radio historian and collector with emphasis, of course, on French equipment. Like Biraud's earlier book, the text is in both French and English.

The author has one of the world's largest and finest radio collections. His chateau houses equipment that cannot be found in any museum – private or public. Many of the illustrations were photographed in his museum. Early drawings are from rare books or catalogs.

It is doubtful another book covering a like range of equipment will be available in the near future. Unfortunately, the weak American dollar (exchange rate) makes the price a little on the high side ($49.95) but this shouldn't deter the ardent historian. The book is not discounted and available only from two sources. Send $49.95 to:

Richard Foster
12 Shawmut Avenue, Cochituate, MA 01778

or

Antique Radio Supply
688 W. First Street, Tempe, Arizona 85281

Book Review:

RADAR DAYS

by E. G. Bowen

Bristol (England): Adam Hilger, 1987 – $28.00

The author of *Radar Days* was intimately involved with the development of airborne radar in Britain, having been director of its main research efforts since early 1935. Here you'll read of the triumphs and setbacks of getting the cranky equipment to operate (at 200 MHz, the first airborne radar frequency), particularly during an important demonstration for Sir Watson Watt or Winston Churchill.

The author documents the invention and utilization of meter-wavelength airborne radar from air-air interception and ship and submarine hunting, to radar beacons. In addition, Bowen was part of the famous Tizard Mission, bringing the secret of centimeter-wave pulsed high-power radar to the USA and Canada. That secret was the cavity magnetron, and the Mission resulted in its production by the hundreds of thousands, as well as the formation of "*the longest running scientific convention of all time*" — MIT's Radiation Laboratory.

The book is much more than a recitation of names and events, for Bowen's lucid style and con tinuous barrage of fascinating anecdotes make the history exciting and believable. It leaves one with the impression that the development of airborne radar was indeed a unique and highly motivated research effort, one which truly saved thousands of lives and won a World War.

-- **Richard Ferranti**
MIT Lincoln Laboratory

A new book:

KATE SMITH

A Bio-bibliography by Michael Pitts

320 pages Hardbound ISSN 0892-5550
$37.95, Greenwood Press
88 Post Road West, Box 5007
Westport, Connecticut 06881

Late one night on a return trip from my camp I tried several 2-meter repeaters without success. Since I was out of range of FM stations, I turned to the AM band for enjoyment. Tuning across the dial I hit station after station with banging music and people yelling at the top of their lungs, when suddenly I found a clear voice singing one of my old favorites, "*I Don't Want to Walk Without You*" followed by "*The Last Time I Saw Paris*".

Being a big band fan I tried in vain to identify the voice and band. In time the announcer told me they were playing Kate Smith favorites. How could I have forgotten a voice that had charmed millions over a period of 50 years!

I later re-discovered Kate Smith with Michael Pitts' book. The author became a Kate Smith fan in 1939 when as a youngster he listened to the "*Kate Smith Hour*". The interest grew and in time he not only became a friend of the songstress but also acquired an amazing amount of material covering her career. I was never a Kate Smith fan although I enjoyed her singing. The book changed all this and I am now seeking old Kate Smith 78's and LP's.

Pitts' book includes a biographical study, a discography, a filmography, a song index, list of her stage and media appearances, sheet music and song books, and an annotated bibliography of works by and about Kate Smith. Here are a few facts: In the depths of the depression (1933) she was the most listened to radio personality, claiming 31% of the audience with Rudy Vallee coming in second at 18%. There were 395 Kate Smith Clubs with over 24,000 members.

Her career started in a Broadway musical (1926) and ended in television. By 1961 she had starred in 15,572 radio shows, sung 2,260 different songs (!) and received 25 million fan letters. Record collectors will find 113 pages listing her recordings ranging from *Moanin' Low, Deep in the Heart of Texas* to *Ava Maria*. Her all-time favorite was *God Bless America*, which gave her and songwriter Irving Berlin millions in royalties, all donated to the Boy and Girl Scouts of America. Kate Smith, unfortunately, lived the life of an invalid in her last years and died of heart failure on June 17, 1986.

Pitts' book is fascinating for one interested in radio entertainment history and popular music.

-- **Bruce Kelley**

Book Review:

The INVISIBLE UNIVERSE REVEALED

The Story of Radio Astronomy

by Gerrit L. Verschur

262 pages, Hardcover
Publisher: Springer-Verlag, New York
(1987 edition)

This book is highly recommended for the arm-chair cosmologist who is interested in our universe and all its complex wonders: quasars, clusters of radio-galaxies such as 3C 75 with one million light year jets, black holes and galactic cannibalism, blazars, Seyferts, neutron stars, binary pulsars and supernovas – and they are all explained in everyday terms as seen (yes, seen) by the radio astronomer.

The book has 108 pictures, many of which are radiographs. Some of the latter are comparable to optical counterparts in detail due to a new high tech process. As an example, a picture is shown of our galactic emission at 408 MHz. with a resolution of one degree. Obviously objects are seen invisible to the optical telescope because of the dust clouds in the Milky Way.

I like the author's casual style. He freely admits there are many unresolved phenomenas such as radio galaxy NGC 4319 paired with quasar Markham 205. According to the red-shifts, the quasar is 12 times further away! Photographic images definitely show a bridge or connection between the two. This didn't seem to bother the author one bit.

Modern radio telescopes have amazing resolving power. For example, the New Mexico Very Large Array (VLA) of twenty-seven 25 meter dishes can discern detail to about a tenth of an arc second which is equilevant to a dime (ten cents) 20 miles away! A far cry from earlier radio telescopes.

The book dwells on the Big Bang and multiple universes and concludes with a description of modern radio telescopes, interferometers, and the development of low-noise receivers.

What more can you ask? It is a revision (1987) of an earlier edition. I obtained my copy from the city library.

THE MUSEUM

NEW EQUIPMENT in A.W.A. Museum

(sets, parts, magazines, books, etc.)

W1DX, W2AFE, W2PWU, W2ODW, W2IIE, W2IA, K2KLP/W2UTH, KA2JAJ, W3FNU, N3VT, W4UMF, W9GFS, Mike Adams, Bob Lozier, Vic Franzoni, Richard Foster, Mrs. Brad Martin, Harvey Roehl, W3DKL,

NEW EXHIBITS

The Association's Museum opened with several new exhibits tailored for the general public. It has been found the majority of visitors want something they can relate to. They walk past $15,000 Marconi receivers and exclaim over $15 plastic table model AC sets.

To satisfy this demand, the rare camera tube exhibit of historical developmental iconoscope and orthicons has been replaced with 200 transistor radios of the 50's and 60's with emphasis on novelty models– radios in pop bottles, mustard jars and gas pumps.

It has been decided to retain the National receiver and Magnavox horn exhibit for another year. The Lee Hagey microphone display is being set up in the broadcast station area, and a new 1930 homemade amateur exhibit can be found on the third floor.

Work continues on the huge tube collection presently stored in the old Museum and the Annex loft.

BUSINESS MEETING

Two major decisions were made by the Board at the semi-annual meeting: to acquire the area in the Annex used by the Legion to store their lawn-mowing equipment and to purchase a table-top computer type publishing system for the new OTB Editor.

A.W.A. HISTORICAL MUSEUM

East Bloomfield, N. Y.
Free Admission

Museum Hours:

May 1st through October 31st
SUNDAY 2 TO 5 PM

June 1st through August 31st
SATURDAY 2 TO 4 PM
WEDNESDAY 7 TO 9 PM

Open to groups by appointment
Tele. (716) 657-7489

Museum Tele. (716) 657-6260

CURATOR Bruce Kelley, W2ICE

COMMITTEE

Charles Bliley, K3NAU
Dick Fish, W2OWF
Arthur Kelly, W2ROB
Roland St. Louis, K2LKH
Steve Sykes, KD2OM

MUSEUM MAINTENANCE and GUIDES*

Dave Atkins	Ed Maher, WB2ZJY
Al Bowman, W2ZUX	Brad Mitchell, WB8YGG
Dave Crothers	Ron Nelson, KA2GLG
Mike Csontos	Mani Pires
Paul Feldman	Tony Prasil
Glenn Fuller, N2EXL	Don Ray, WA2PKS
Bob Hobday, N2EVG	M. Rosenfeld, KA2JAJ
Russ Maurer	Bill Shaw, W2HYN
Doug McManus	John Ward

*(*Officers and Directors also act as Museum guides.)*

AMATEUR OPERATION

W2AN: Geo. Batterson and B. Kelley

THE END

73, Bruce Kelley